

A vertical image on the left side of the page shows a large offshore wind turbine. The turbine is white with a yellow base and is situated in the ocean. In the background, another smaller wind turbine is visible. The image has a blue overlay with a faint circuit board pattern.

Long Island Offshore Wind Export Public Policy Transmission Report Appendices

**A Report from the New York
Independent System Operator**

June 13, 2023

Appendix A: Viability & Sufficiency Assessment

Long Island Offshore Wind Export Public Policy Transmission Planning Report

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Long Island Offshore Wind Export Public Policy Transmission Need Viability & Sufficiency Assessment

A Report by the
New York Independent System Operator

April 5, 2022

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Executive Summary

The NYISO's Public Policy Transmission Planning Process implements the Federal Energy Regulatory Commission (FERC) Order No. 1000 directive requiring public utility transmission providers to consider in their planning processes transmission needs driven by Public Policy Requirements. The NYISO conducted this Viability and Sufficiency Assessment for the Long Island Offshore Wind Export Public Policy Transmission Need (LI Offshore Wind Export PPTN) to determine whether each proposal submitted by a Developer is complete, viable, and sufficient to satisfy the Public Policy Transmission Need.

The NYISO initiated its 2021-2022 cycle of the Public Policy Transmission Planning Process by soliciting proposed transmission needs that stakeholders or interested parties believe are driven by Public Policy Requirements. The NYISO filed for consideration by the New York Public Service Commission (NYPSC) the proposed transmission needs, which the NYPSC published the proposed needs for public comment pursuant to the State Administrative Procedure Act. Upon considering the various comments submitted, the NYPSC issued an order that identified the Climate Leadership and Community Protection Act (CLCPA) as a Public Policy Requirement driving transmission needs associated with the delivery of offshore wind energy from Long Island to the rest of the state.

The NYISO established sufficiency criteria in accordance with the criteria set forth by the NYPSC order. After extensive discussion with stakeholders, the NYISO created the baseline power flow study case and results and used these to conduct its independent analysis of the viability and sufficiency of each proposed project.

The NYISO issued a solicitation for projects to address the LI Offshore Wind Export PPTN and received 19 proposals from four developers. The NYISO conducted a comparable analysis for each project in the same manner as it conducted the baseline analysis. Out of the 19 proposed projects, the NYISO identifies 16 viable and sufficient Public Policy Transmission Projects and one viable and sufficient Other Public Policy Project.

1. Introduction

The NYISO's regional planning process, known as the Comprehensive System Planning Process (CSPP), is comprised of four components: (1) the Local Transmission Owner Planning Process, (2) the Reliability Planning Process, (3) the Economic Planning Process, and (4) the Public Policy Transmission Planning Process (PPTPP).¹ The NYISO also conducts interregional planning with its neighboring control areas under the Northeast Coordinated System Planning Protocol. The PPTPP supports the FERC Order No. 1000 directive requiring public utility transmission providers to consider in their planning processes transmission needs driven by Public Policy Requirements ("Public Policy Transmission Needs"). Section 31.4 of Attachment Y of the NYISO Open Access Transmission Tariff (OATT, or the Tariff) describes the planning process that the NYISO, and all interested parties, shall follow to consider Public Policy Requirements² that drive the need for expansions or upgrades to Bulk Power Transmission Facilities (BPTFs).

The PPTPP consists of four main steps: (1) the identification of Public Policy Transmission Needs, (2) the proposal of solutions to identified Public Policy Transmission Needs, (3) the evaluation of the viability and sufficiency of proposed transmission and non-transmission solutions to a Public Policy Transmission Need, and (4) the evaluation and selection of the more efficient or cost-effective Public Policy Transmission Project to satisfy a Public Policy Transmission Need.

For each two-year CSPP cycle, the NYISO initiates the first step of the PPTPP after the draft Reliability Needs Assessment (RNA) results are released in the Reliability Planning Process. In the identification step, the NYISO solicits proposals for transmission needs driven by Public Policy Requirements, and the NYPSC, or Long Island Power Authority (LIPA), as applicable, considers the proposals in order to identify Public Policy Transmission Needs, and the NYPSC determines for which of those the NYISO should solicit solutions. Subsequent to the identification of Public Policy Transmission Needs, the NYISO solicits proposed solutions, and Developers submit Public Policy Transmission Projects and Other Public Policy Projects to satisfy the identified Public Policy Transmission Needs. All submissions, regardless of project type, are evaluated for their viability and sufficiency to meet the Public Policy Transmission Needs. Pursuant to the Tariff, the NYISO conducted this Viability & Sufficiency Assessment for the Long Island

¹ See OATT Attachment Y.

² A "Public Policy Requirement" is a federal or New York State statute or regulation, including a New York State Public Service Commission (NYPSC) order adopting a rule or regulation subject to and in accordance with the State Administrative Procedure Act, any successor statute, or any duly enacted law or regulation passed by a local governmental entity in New York State, that may relate to transmission planning on the BPTFs.

Offshore Wind Export Public Policy Transmission Need (LI Offshore Wind Export PPTN) to determine whether each Developer-submitted proposal is complete, viable, and sufficient to satisfy the identified need.

A Public Policy Transmission Project is a transmission project or a portfolio of transmission projects proposed by Developer(s) to satisfy an identified Public Policy Transmission Need and for which the Developer(s) seek to be selected by the NYISO for purposes of allocating and recovering the project's costs under the NYISO OATT.³ An Other Public Policy Project is a non-transmission project or a portfolio of transmission and non-transmission projects proposed by a Developer to satisfy an identified Public Policy Transmission Need. An Other Public Policy Project may consist of transmission, generation, and/or demand-side projects, and is not eligible for selection for purposes of cost allocation and cost recovery under the NYISO's tariffs.⁴

Following the NYISO's presentation of the Viability & Sufficiency Assessment, the NYISO evaluates the proposed Public Policy Transmission Projects that have satisfied the viability and sufficiency requirements and ranks them based on the quality of their satisfaction of numerous metrics. Based on this evaluation, the NYISO may select the more efficient or cost-effective Public Policy Transmission Project to satisfy the Public Policy Transmission Need, if any. The NYISO's Board of Directors will weigh the draft Public Policy Transmission Report from NYISO staff, input from stakeholders, and the views of the NYISO's Market Monitoring Unit on the impacts of the proposed transmission projects on the NYISO's competitive wholesale electricity markets, in determining whether and which project to select.⁵ A Public Policy Transmission Project selected as the more efficient or cost-effective solution is eligible for cost allocation and cost recovery under the NYISO OATT.⁶ The assumptions, inputs, methodologies, and results of the NYISO's analysis are published in the Public Policy Transmission Planning Report.

If at any time prior to the NYISO's selection of the more efficient or cost-effective solution, the NYPSC determines: (i) there is no longer a transmission need driven by a Public Policy Requirement that requires the NYISO's evaluation of potential transmission solutions, or (ii) the transmission need should be modified, the NYISO will not perform an evaluation, or make a selection of, a more efficient or cost-effective transmission solution initially identified by the NYPSC for that planning cycle. If the NYPSC

³ See OATT § 31.1.

⁴ See OATT § 31.1.

⁵ See OATT § 31.4.

⁶ See OATT §§ 6.10, 31.5. An Other Public Policy Project is not eligible for selection for purposes of cost allocation and cost recovery under the NYISO's tariffs. *Id.*

modifies the transmission need driven by a Public Policy Requirement, the NYISO will restart its Public Policy Transmission Planning Process as an out-of-cycle process. This out-of-cycle process will begin with the NYISO's solicitation of Public Policy Transmission Projects to address the modified Public Policy Transmission Need. The NYISO will evaluate the viability and sufficiency of the proposed Public Policy Transmission Projects. The NYISO will then proceed to evaluate the viable and sufficient Public Policy Transmission Projects for purposes of selecting the more efficient or cost-effective transmission solution to the modified Public Policy Transmission Need.

2. Summary of the Public Policy Transmission Need

On August 3, 2020, the NYISO issued a letter inviting stakeholders and interested parties to submit proposed transmission needs driven by Public Policy Requirements to the NYISO on or before October 2, 2020.⁷ On October 9, 2020, the NYISO filed at the NYPSC proposals for transmission needs driven by Public Policy Requirements submitted by 15 entities.⁸ On that date, the NYISO also submitted to LIPA 10 proposals for transmission needs that, as proposed, would require a physical modification to transmission facilities in the Long Island Transmission District. Previously, on July 30, 2020, LIPA referred to the PSC a Public Policy Transmission Need for the delivery of offshore wind output on Long Island and from Long Island into New York City.⁹ On November 18, 2020, the PSC published the proposed needs in the State Register for comments in accordance with the State Administrative Procedure Act.¹⁰

Following the public comment period, the PSC issued an order on March 19, 2021 stating that:

Based on LIPA's referral letter, the studies outlined in the letter, the several proposals recommending the identification of a transmission need along the Long Island-New York City interface, and the NYISO's similar recommendation made in its comments, we find the CLCPA constitutes a Public Policy Requirement driving the need for:

- 1) Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the State; and
- 2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.¹¹

The Commission referred the Public Policy Transmission Need to the NYISO to consider solutions for

⁷ The requirements for the Public Policy Transmission Planning Process are set forth in Attachment Y of the OATT and the NYISO Public Policy Transmission Planning Process Manual.

⁸ The NYISO posted these submittals on its Planning Studies website under "Proposed Needs" contained within the "Public Policy Documents" folder on the NYISO's Planning Studies website, which can be accessed at: <https://www.nyiso.com/cspp>.

⁹ Case No. 8-E-0623, *In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2018*, Letter of Rick Shansky to Chair John Rhodes (July 30, 2020).

¹⁰ Case No. 20-E-0497, *In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2020*, Notice of Proposed Rulemaking, New York State Register I.D. No. PSC-46-20-00009-P (November 18, 2020), at 17.

¹¹ Case No. 20-E-0497 and Case No. 18-E-0623, *Order Addressing Public Policy Requirements for Transmission Planning Purposes* (March 19, 2021), at 23, available at <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={8C8F3D7A-4FEB-4B18-88F5-82CF587895C9}>.

increasing transmission capability from Long Island into Southeastern New York.¹² The order further stated:

In accordance with the NYISO OATT, we also prescribe criteria to assist that NYISO in its solicitation and evaluation of proposed solutions to the identified Public Policy Transmission Needs. The NYISO's analysis should ensure no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions. The analysis should also ensure the system would be maintained in a reliable manner.¹³

2.1 – Sufficiency Criteria

The NYISO established sufficiency criteria in accordance with the criteria set forth by the NYPSC Order, and developed baseline models and associated power flow results to aid interested parties in developing project proposals.

The NYISO made presentations at combined meetings of the Transmission Planning Advisory Subcommittee (TPAS) and the Electric System Planning Working Group (ESPWG)¹⁴ to review the PSC's determination of the Public Policy Requirement and the nature of the resulting LI Offshore Wind Export PPTN.¹⁵ The NYISO held a technical conference on July 8, 2021 with Developers and interested parties to obtain their input on the NYISO's application of the selection metrics set forth in Section 31.4.8.1 of the OATT for purposes of soliciting solutions to the Public Policy Transmission Need.¹⁶

In order to address the LI Offshore Wind Export PPTN, as identified by the NYPSC, a sufficient Public Policy Transmission Project or Other Public Policy Project shall meet, at a minimum, the following criteria:

- Ensure full output of at least 3,000 MW of offshore wind connected to Long Island (Zone K) while maintaining reliability under all lines-in-service (N-0 and N-1) and prior-outage (N-1-1) conditions per North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council (NPCC) and New York State Reliability Council (NYSRC) transmission security criteria, and local Transmission Owner planning criteria. A sufficient project must resolve constraints on Bulk Electric System facilities that are significantly impacted by Long Island offshore wind under summer peak and light load conditions.
- Add at least one bulk transmission intertie cable connecting between Zone K and the rest of the New York Control Area.
- Additional transmission expansion or upgrades, as necessary, to facilitate the full output of at

¹² *Id.* at 23-24.

¹³ *Id.*

¹⁴ The meetings were held on March 23, 2021, March 26, 2021, April 7, 2021, April 23, 2021, May 3, 2021, May 20, 2021, June 1, 2021, June 22, 2021, July 1, 2021, July 23, 2021, and August 2, 2021.

¹⁵ The NYISO's presentations are posted on its website under meeting materials at the following link: <https://www.nyiso.com/espwg>.

¹⁶ OATT § 31.4.4.3.1; Public Policy Transmission Planning Process Manual ("PPP Manual") § 3.2.

least 3,000 MW of Long Island offshore wind under summer peak and light load conditions.

Appendix A provides the details of the sufficiency criteria that the NYISO applied to determine the sufficiency of each proposed Public Policy Transmission Project and Other Public Policy Project to satisfy the LI Offshore Wind Export PPTN.

2.2 – Sufficiency Assessment Methodology

The process for developing the study cases for the Viability & Sufficiency Assessment is described in Section 4 of the NYISO Public Policy Transmission Planning Process Manual. Based on the sufficiency criteria set forth by the NYPSC Order, the NYISO determined that a power flow model should be applied to evaluate the LI Offshore Wind Export PPTN. The baseline and project study cases are based on the NYISO 2021 FERC 715 filing with the following major modifications:

- Offshore wind generation modeled at full output:
 - ~3,000 MW connected to Zone K (Long Island): 139 MW @ East Hampton 69 kV, 880 MW @ Holbrook 138 kV, 1,260 MW @ Barrett 138 kV, 800 MW @ Ruland Rd 138 kV;
 - ~6,000 MW connected to Zone J (New York City): 816 MW @ Gowanus 345 kV, 1,230 MW @ Astoria 138 kV, 1,310 MW @ Farragut East 345 kV, 1,310 MW Farragut West 345 kV, and 1,310 MW West 49th St. 345 kV.
- Load levels:
 - Zone K: 4,423 MW (including 499 MW behind-the-meter solar) in the Summer Peak case and 1,107 MW (including 1,108 MW behind-the-meter solar) in the Light Load case;
 - Zone J: 11,195 MW (including 290 MW behind-the-meter solar) in the Summer Peak case and 4,524 MW in the Light Load case (including 644 MW behind-the-meter solar).
- Imports:
 - Summer Peak: Norwalk – Northport = 0 MW, Cross Sound Cable = 0 MW, Neptune = 660 MW, Zone J Generic HVDC @ Rainey 345 kV = 1,310 MW;
 - Light Load: Norwalk – Northport = 0 MW, Cross Sound Cable = 0 MW, Neptune = 0 MW, Zone J Generic HVDC @ Rainey 345 kV = 0 MW.
- Dispatch of existing generators:
 - Following recommendations of the Transmission Owners Con Edison and LIPA, certain existing generators are kept dispatched on to maintain local reliability. The details can be found in the power flow cases.

The NYISO utilized these modified cases to conduct transmission security analysis of the Southeastern New York system. Transmission security is the ability of the power system to withstand disturbances such as short circuits or unanticipated loss of system elements and continue to supply and deliver electricity. Security is assessed deterministically, with potential disturbances being applied without

concern for the likelihood of the disturbance in the assessment. These disturbances (single-element and multiple-element contingencies) are categorized as the design criteria contingencies, explicitly defined in the NYSRC Reliability Rules. The impacts when applying these design criteria contingencies are assessed to ensure no thermal loading or voltage driven by the export of Long Island offshore wind power.

The NYISO conducts transmission security analysis of the BPTFs and non-BPTFs (100 kV and above) in accordance with applicable NERC Reliability Standards, NPCC Transmission Design Criteria, NYSRC Reliability Rules, and local Transmission Owner planning criteria. AC contingency analysis is performed to evaluate thermal and voltage performance under design contingency conditions using the Siemens PTI PSS®E and PowerGEM TARA programs. Generation is dispatched to match load plus system losses, while respecting transmission security, subject to the sufficiency criteria constraints described in Appendix A. Scheduled inter-area transfers modeled in the base case between the New York Control Area (NYCA) and neighboring systems are held constant.

To evaluate the impact of a single event from the normal system condition (N-1), all design criteria contingencies are evaluated, including; single element, common structure, stuck breaker, generator, bus, and HVDC facilities contingencies. An N-1 violation occurs when the power flow on the monitored facility is greater than the applicable post-contingency rating. N-1-0 and N-1-1 analysis evaluates the ability of the system to meet design criteria after a critical element has already been lost. The process of N-1-0 and N-1-1 testing allows for corrective actions including generator redispatch, phase angle regulator (PAR) adjustments, and HVDC adjustments between the first and second contingency. However, reducing the output of renewables is not allowed under the Sufficiency Criteria. These corrective actions prepare the system for the next contingency by reducing the flow to normal rating after the first contingency. An N-1-0 violation occurs when the flow cannot be reduced to below the normal rating following the first contingency. An N-1-1 violation occurs when the facility loading is reduced to below the normal rating following the first contingency, but the power flow following the second contingency is greater than the applicable post-contingency rating.

2.3 – Baseline Results

The Long Island transmission system (NYISO Zone K) is primarily comprised of a 138 kV backbone running in a predominantly east-to-west axis and an underlying 69 kV system. Long Island is connected to the rest of the NYCA with two (2) 345 kV tie lines connecting to Westchester County (Zone I) and two (2) 138 kV tie lines connecting to New York City (Zone J). Long Island is further connected to external control areas with controllable external ties connecting to Connecticut and New Jersey. The baseline assessment

results¹⁷ show that the existing Long Island transmission system and tie lines are not capable of exporting offshore wind power to the rest of New York State that exceeds the native Long Island load. Table 1 through Table 3 and Figure 1 through Figure 3 summarize some of the significant constraints found in baseline assessment. These results in these tables and figures are not an exhaustive list, but are representative of the extent and severity of the constraints.

¹⁷ Baseline results can be found at <https://www.nyiso.com/documents/20142/22968753/LI-PPTN-BaselineResults.xlsx> and <https://www.nyiso.com/documents/20142/22792555/08 LI OSW Export ESPWG 7-01-2021.pdf>

Table 1: Significant N-0 Constraints

Monitored Facility	Light Load		Summer Peak	
	Rate (MVA)	Loading (%)	Rate (MVA)	Loading (%)
Long Island				
Valley Stream - East Garden City 138 kV	194	217	214	100
East Garden City - New Bridge Rd 138 kV	194	207	-	-
Carle Place - East Garden City 138 kV	320	184	-	-
New Bridge Rd - Ruland Rd 138 kV	259	108	-	-
Long Island Tie Lines				
Y50: Dunwoodie - Shore Rd 345 kV	780	167	-	-
Y49: Sprainbrook - East Garden City 345 kV	770	126	-	-

Table 2: Significant N-1 Constraints

Monitored Facility	Light Load			Summer Peak		
	Rate (MVA)	Loading (%)	Contingency	Rate (MVA)	Loading (%)	Contingency
Long Island						
East Garden City - New Bridge Rd 138 kV	284	216	VS Bus Con			
Carle Place - East Garden City 138 kV	352	255	EGC Bus Con	303	102	EGC Bus Con
Valley Stream - East Garden City 138 kV	284	230	Valley Stream - EGC	298	124	Valley Stream - EGC
New Bridge Rd - Ruland Rd 138 kV	388	135	Ruland - NB	-	-	-
Hauppauge - C. Islip 138 kV ¹⁸	288	118	Holbrook - Ruland	-	-	-
Long Island Tie Lines						
Jamaica - Valley Stream 138 KV	375	231	EGC Bus Con	365	102	EGC Bus Con

¹⁸ Following the solicitation for solutions, LIPA provided corrected ratings for this line that would increase the winter LTE rating to 387 MVA. This rating correction resolves the Hauppauge – C. Islip 138 kV overloads found in the baseline analysis as well as the VSA analysis for each project.

Jamaica - Lake Success 138 KV	368	193	Y50	-	-	-
Y50: Dunwoodie - Shore Rd 345 kV	1,028	170	Y49	-	-	-
Y49: Sprainbrook - East Garden City 345 kV	990	142	ShoreRd Bus Con	-	-	-

Table 3: Significant N-1-1 Constraints

Monitored Facility	Light Load				Summer Peak			
	Rate (MVA)	Loading (%)	1st Contingency	2nd Contingency	Rate (MVA)	Loading (%)	1st Contingency	2nd Contingency
Long Island								
East Garden City - New Bridge Rd 138 kV	284	287	EGC - NewBridge	EGC - NewBridge	287	127	EGC - NewBridge	Barrett - VS
Glenwood - Shore Road 138 kV	388	365	Y49	Glenwood Bus Con	324	133	Y49	EGC - Roslyn
Valley Stream - East Garden City 138 kV	284	346	Valley Stream - EGC	Ruland OSW	298	173	EGC - Roslyn	Barrett Bus Con
New Bridge Rd - Ruland Rd 138 kV	331	167	NewBridge - Ruland	NewBridge - Ruland	-	-	-	-
Syosset - Greenlawn 138 kV	368	120	Carle - EGC	Elwood Bus Con	-	-	-	-
Hauapague - C. Islip 138 kV	288	120	Holbrook - Ruland	Pilgrim xfmr	-	-	-	-
Long Island Tie Lines								
Jamaica - Lake Success 138 KV	368	295	Y49	Y50	345	113	901	Astoria OSW
Jamaica - Valley Stream 138 KV	375	250	Y50	Y49	-	-	-	-
Y50: Dunwoodie - Shore Rd 345 kV	1,028	206	Y49	901	-	-	-	-
Y49: Sprainbrook - East Garden City 345 kV	990	169	Y50	NNC	-	-	-	-
Norwalk - Northport 138 kV	210	152	Y49	Y50	-	-	-	-
New York City								
Farragut West 345/138 kV xfmr	177	174	Y49	Y50	-	-	-	-
Corona - Jamaica 138 kV	250	162	Y49	Y50	-	-	-	-
Hudson Ave - Jamaica 138 kV	363	144	Y49	Y50	-	-	-	-

Figure 1: Significant N-0 Constraints. Red shading indicates constraints that occur in the light load conditions.



Figure 2: Significant N-1 Constraints. Red shading indicates constraints that occur in the light load conditions only and blue shading indicates constraints in both summer peak and light load conditions.

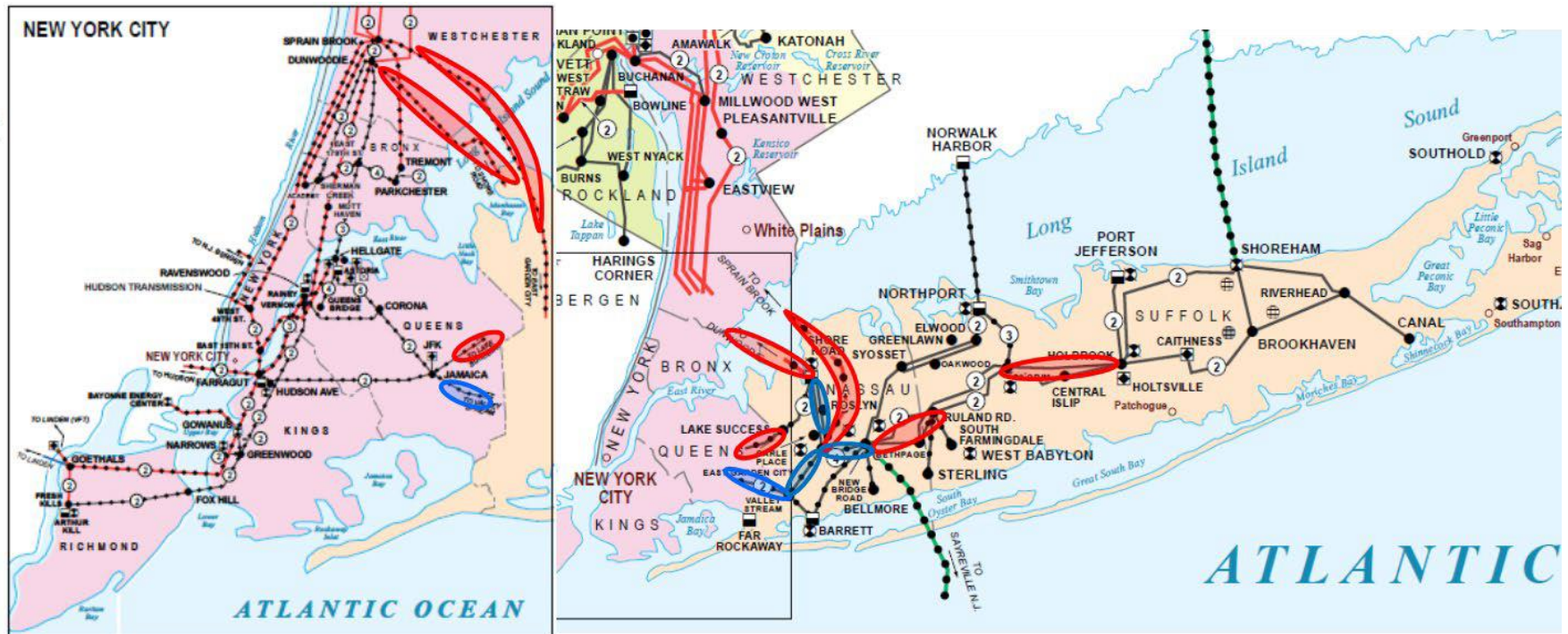
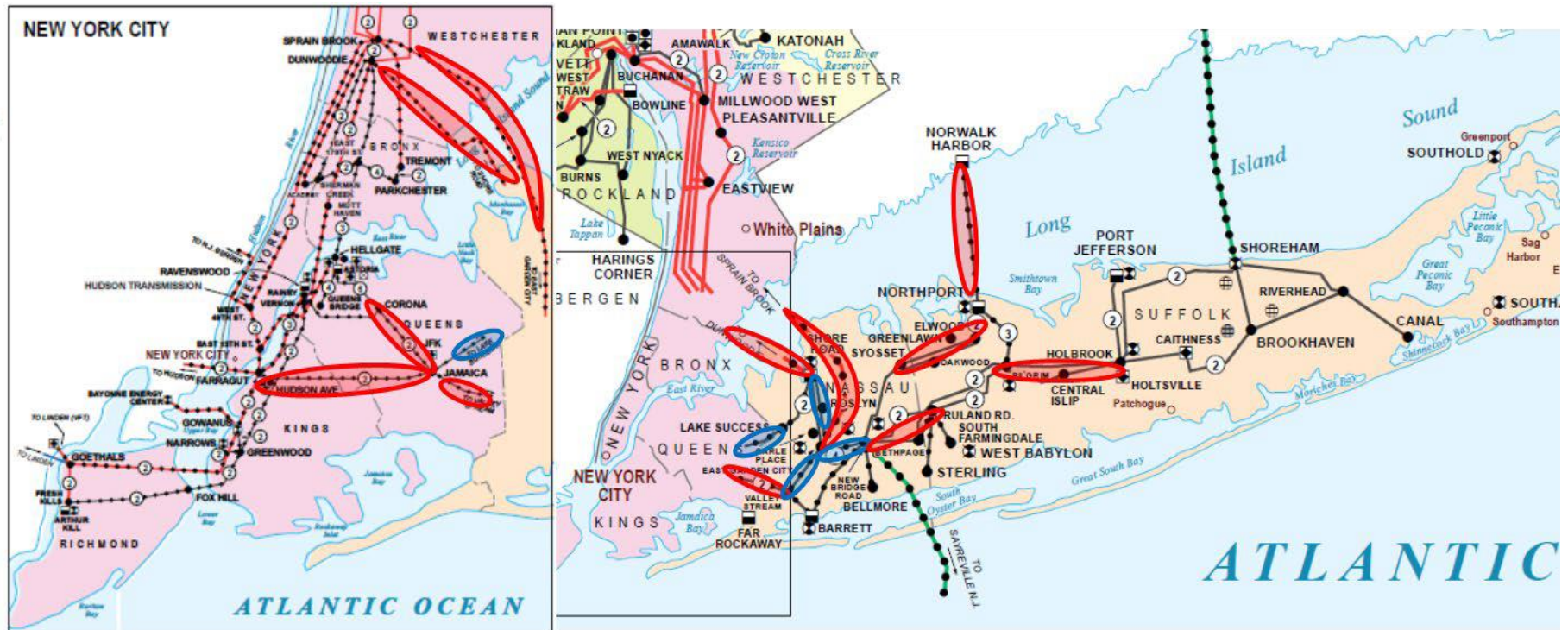


Figure 3: Significant N-1-1 Constraints. Red shading indicates constraints that occur in the light load conditions only and blue shading indicates constraints in both summer peak and light load conditions.



3. Proposed Projects and Findings

On August 12, 2021, the NYISO issued a solicitation for Public Policy Transmission Projects and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need. Project proposals were due on or before October 11, 2021.¹⁹ Following a July 8, 2021 Technical Conference that preceded the solicitation, the NYISO received numerous questions from interested Developers seeking clarification on the process and the LI Offshore Wind Export PPTN Sufficiency Criteria. The NYISO summarized the questions and provided responses in three (3) public Frequently Asked Questions (FAQ) documents.²⁰ The NYISO received 18 Public Policy Transmission Projects and one Other Public Policy Project.

The NYISO conducted a comparable transmission security analysis of each project in the same manner as the baseline analysis. The objective of this analysis is to identify if the Long Island-connected offshore wind power can securely be delivered to the NYCA load following the addition of each project to the baseline case. As described in the August 12, 2021 solicitation notice and subsequent FAQ documents, constraints do not need to be resolved for the purpose of determining Sufficiency on certain facilities, if they are:

- operated at a voltage below 100 kV,
- not significantly impacted by the injection of power from Long Island offshore wind projects; or
- anticipated to be upgraded by offshore wind developers per NYSERDA's Offshore Wind Renewable Energy Credit Purchase and Sale Agreements - specifically, the 138 kV circuits between Barrett and New Bridge Rd, and between Barrett and Valley Stream.

The NYISO evaluated the viability and sufficiency of all 19 projects. Table 4 lists the findings for each proposed solution. Table 5 summarizes the significant constraints for two projects that resulted in those projects not meeting the Sufficiency Criteria.

¹⁹ The LI Offshore Wind Export PPTN Solicitation is posted at:

<https://www.nyiso.com/documents/20142/22968753/Long-Island-Offshore-Wind-Export-Public-Policy-Transmission-Need-Project-Solicitation.pdf>

²⁰ The LI Offshore Wind Export PPTN FAQ documents are posted on the NYISO website at <https://www.nyiso.com/cspp> under the Long Island Offshore Wind Export PPTN folder.

Table 4: Viability & Sufficiency Findings

Developer	Project Name	Project #	Category	Viable ?	Sufficient ?
LS Power Grid New York Corporation I	Atlantic Gateway	T035	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Core 1	T036	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Core 2	T037	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Core 3	T038	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Core 4	T039	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Core 5	T040	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Core 6	T041	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Core 7	T042	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Enhanced 1	T043	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect - Enhanced 2	T044	PPTP	Yes	Yes
NextEra Energy Transmission New York, Inc	New York Renewable Connect – Plus 3	OPP45	OPPP	Yes	Yes
Anbaric Development Partners, LLC	Downstate Clean Powerlink	T046	PPTP	Yes	No
New York Power Authority/New York Transco LLC	Propel NY Energy – Base Solution 1	T047	PPTP	Yes	Yes
New York Power Authority/New York Transco LLC	Propel NY Energy – Base Solution 2	T048	PPTP	Yes	Yes
New York Power Authority/New York Transco LLC	Propel NY Energy – Base Solution 3	T049	PPTP	Yes	Yes
New York Power Authority/New York Transco LLC	Propel NY Energy – Base Solution 4	T050	PPTP	Yes	No
New York Power Authority/New York Transco LLC	Propel NY Energy – Alternate Solution 5	T051	PPTP	Yes	Yes
New York Power Authority/New York Transco LLC	Propel NY Energy – Alternate Solution 6	T052	PPTP	Yes	Yes
New York Power Authority/New York Transco LLC	Propel NY Energy – Alternate Solution 7	T053	PPTP	Yes	Yes

Table 5: Summary of Significant Results for T046 & T050

Monitored Facility	Light Load			
	Rate (MVA)	Loading (%)	1st Contingency	2nd Contingency
T046				
Sprain Brook - Shore Rd	1,028	114	EGC-Mott Haven	T:W89&W90
T050 ²¹				
Barrett - Tremont 345 kV	1,069	125	Y50	Y49
Y50: Dunwoodie - Shore Rd 345 kV	1,028	121	Y49	Barrett-Tremont
Y49: Sprain Brook - EGC 345 kV	770	104	903	Base Case

²¹ Additional constraints were found for the T050 project beyond those that are shown in the table.

4. Conclusions

The NYISO performed a comparable analysis of each proposed Public Policy Transmission Project and Other Public Policy Project to determine whether the proposed solution satisfies the Long Island Offshore Wind Export Public Policy Transmission Need. The NYISO determined that the following projects meet the sufficiency criteria:

- LS Power Grid New York Corporation I - Atlantic Gateway
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Core 1
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Core 2
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Core 3
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Core 4
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Core 5
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Core 6
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Core 7
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Enhanced 1
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Enhanced 2
- NextEra Energy Transmission New York, Inc - New York Renewable Connect - Plus3²²
- New York Power Authority/New York Transco LLC - Propel NY Energy – Base Solution 1
- New York Power Authority/New York Transco LLC - Propel NY Energy – Base Solution 2
- New York Power Authority/New York Transco LLC - Propel NY Energy – Base Solution 3
- New York Power Authority/New York Transco LLC - Propel NY Energy – Alternate Solution 5
- New York Power Authority/New York Transco LLC - Propel NY Energy – Alternate Solution 6
- New York Power Authority/New York Transco LLC - Propel NY Energy – Alternate Solution 7

For each sufficient project, the Developer of the project is a Qualified Developer, the solution is technically practicable, and the Developer has provided an approach for acquiring any necessary rights-of-way, property, and facilities. Therefore, each sufficient project is also viable.

²² As an Other Public Policy Project, this project's viability and sufficiency was assessed for information purposes, but it is not eligible to be evaluated and selected in the PPTPP for purposes of cost allocation and cost recovery.

5. Next Steps

The NYISO presented these results at the joint Electric System Planning Working Group (ESPWG) and Transmission Planning Advisory Subcommittee (TPAS) meeting on March 1, 2022. The NYISO received comments on the results from several interested parties, which it posted on its website and addressed at a joint ESPWG/TPAS meeting on April 1, 2022²³. After the issuance and posting of the final Viability & Sufficiency Assessment, the NYISO will file the final Viability & Sufficiency Assessment to the NYPSC. The NYISO will evaluate the viable and sufficient Public Policy Transmission Projects that elect²⁴ to proceed for purposes of selecting the more efficient or cost-effective Public Policy Transmission Project that is eligible for cost allocation and cost recovery under the NYISO's tariffs. The NYISO will rank these Public Policy Transmission Projects based on their satisfaction of the metrics set forth in the tariffs and in the NYPSC Order and document its findings in the Long Island Offshore Wind Export Public Policy Transmission Planning Report. Based upon the Public Policy Transmission Report, input from stakeholders and interested parties, and from the NYISO's Market Monitoring Unit, the NYISO Board of Directors may select the more efficient or cost-effective Public Policy Transmission Project to meet the Long Island Public Policy Transmission Need, if any.

²³ https://www.nyiso.com/documents/20142/29635167/06_LI_OSW_Export_ESPWG_04-01-2022.pdf

²⁴ Within 15 Calendar Days of the NYISO filing the VSA results with the NYPSC, unless extended by the NYISO pursuant to Sections 31.1.8.7 and 31.4.6.6 of the Open Access Transmission Tariff, the Developer of a proposed Public Policy Transmission Project that the NYISO has determined is viable and sufficient must notify the NYISO whether it intends for its project to proceed to be evaluated for purposes of the NYISO's selection of the more efficient or cost-effective Public Policy Transmission Project to satisfy the LI Offshore Wind Export PPTN.

Long Island Offshore Wind Export Public Policy Transmission Need

Sufficiency Criteria and Additional Information

Sufficiency Criteria (Minimum Criteria)

In order to address the Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN) as identified by the NYPSC, a sufficient Public Policy Transmission Project or Other Public Policy Project shall meet, at a minimum, the following criteria:

- Ensure full output of at least 3,000 MW of offshore wind connected to Long Island (Zone K) while maintaining reliability under all lines-in-service (N-0 and N-1) and prior-outage (N-1-1) conditions per North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council (NPCC) and New York State Reliability Council (NYSRC) transmission security criteria, and local Transmission Owner planning criteria. A sufficient project must resolve constraints on Bulk Electric System facilities that are significantly impacted by Long Island offshore wind under summer peak and light load conditions.
- Add at least one bulk transmission intertie cable connecting between Zone K and the rest of the New York Control Area.
- Additional transmission expansion or upgrades, as necessary, to facilitate the full output of at least 3,000 MW of Long Island offshore wind under summer peak and light load conditions.

Evaluation and Selection Criteria for the Public Policy Transmission Project

For the purposes of evaluation and selection of the more efficient or cost effective Public Policy Transmission Project to address the LI PPTN, the following criteria will be applied:

- Per Section 31.4.8.1 of Attachment Y to the NYISO OATT, NYISO will consider the following criteria and metrics: capital cost estimate, voluntary cost cap, cost per MW ratio, expandability, operability, performance, production cost, property rights and routing, potential construction delays, and other metrics applicable to the Public Policy Requirement to achieve the Climate Leadership and Community Protection Act (CLCPA) targets.
- The ability of a Public Policy Transmission Project to enable greater levels of offshore wind energy delivery from Long Island to the rest of New York will be valued in the evaluation process. Scenarios representing Long Island offshore wind in excess of 3,000 MW will be used to evaluate project performance with respect to the expandability and other metrics. The evaluation will include, among other potential scenarios, an “Alternate Scenario” which models 6,000 MW of offshore wind connected to New York City and 6,000 MW connected to Long Island.
- The following additional criteria was identified in the NYPSC Order:
 - The NYISO’s analysis should ensure no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions.

- The analysis should also ensure the system would be maintained in a reliable manner.
- The NYISO shall also consider other metrics in its evaluation of this Public Policy Requirement, including: changes in production costs; Load-Based Marginal Prices; transmission losses; emissions; Installed Capacity costs; Transmission Congestion Contract revenues; transmission congestion; impacts on transfer limits; and, resource deliverability.¹

PPTN-specific Project Information

- For the purpose of determining Sufficiency, constraints do not need to be resolved for facilities that are:
 - operated at a voltage below 100 kV;
 - not significantly impacted by the injection of power from Long Island offshore wind projects; or
 - anticipated to be upgraded by offshore wind developers per NYSERDA's Offshore Wind Renewable Energy Credit Purchase and Sale Agreement's - specifically, the 138 kV circuits between Barrett and New Bridge Rd, and between Barrett and Valley Stream.
- Developers shall identify which Project components are new facilities, upgrades², or Network Upgrade Facilities³, as described in the Public Policy Transmission Planning Process Manual Attachments B and C. NYISO will review the classification of Project components and, if necessary, ask the Developer for clarification or correction.

Baseline Study Cases

The study cases used in the baseline analysis (Baseline Scenario) for the LI PPTN are based on the NYISO 2021 FERC 715 filing with the following major modifications:

- Offshore wind generation modeled at full output:
 - ~3,000 MW connected to Zone K (Long Island): 139 MW @ East Hampton 69 kV, 880 MW @ Holbrook 138 kV, 1,260 MW @ Barrett 138 kV, 800 MW @ Ruland Rd 138 kV
 - ~6,000 MW connected to Zone J (New York City): 816 MW @ Gowanus 345 kV, 1,230 MW @ Astoria 138 kV, 1,310 MW @ Farragut East 345 kV, 1,310 MW Farragut West 345 kV, and 1,310 MW West 49th St. 345 kV
- Load levels:
 - Zone K: 4,423 MW (including 499 MW behind-the-meter solar) in the Summer Peak case and 1,107 MW (including 1,108 MW behind-the-meter solar) in the Light Load case
 - Zone J: 11,195 MW (including 290 MW behind-the-meter solar) in the Summer Peak case and 4,524 MW in the Light Load case (including 644 MW behind-the-meter solar)
- Imports:
 - Summer Peak: Norwalk – Northport = 0 MW, Cross Sound Cable = 0 MW, Neptune = 660 MW, Zone J Generic HVDC @ Rainey 345 kV = 1,310 MW

¹PSC Order, at 24.

²OATT Attachment Y 31.6.4

³OATT Attachment P 22.1

- Light Load: Norwalk – Northport = 0 MW, Cross Sound Cable = 0 MW, Neptune = 0 MW, Zone J Generic HVDC @ Rainey 345 kV = 0 MW
- Dispatch of existing generators:
 - Following recommendations of the Transmission Owners ConEdison and LIPA, certain existing generators are kept dispatched on to maintain local reliability. The details can be found in the power flow cases.

In addition to the Baseline Scenario, an Alternate Scenario is available with the following distinction:

- Offshore wind generation modeled at full output:
 - ~6,000 MW connected to Zone J: 816 MW @ Gowanus 345 kV, 1,230 MW @ Astoria 138 kV, 1,310 MW @ Farragut East 345 kV, 1,310 MW Farragut West 345 kV, and 1,310 MW West 49th St. 345 kV
 - ~6,000 MW connected to Zone K: 139 MW @ East Hampton 69 kV, 1,050 MW @ Holbrook 138 kV, 1,350 MW @ Barrett 138 kV, 1,150 MW @ Ruland Rd. 138 kV, 1,150 MW @ East Garden City 345 kV, and 1,150 MW @ Northport 138 kV

The Baseline Scenario cases will be used in the Viability & Sufficiency Assessment to determine sufficiency, while the Alternate Scenario will be used to assess the transmission solutions' performance in the expandability metric and other metrics in the evaluation and selection of the more effective or cost efficient solution. Other scenarios, including scenarios representing achievement of the CLCPA Public Policy Requirement, may also be utilized in the evaluation and selection phase.

The Baseline and Alternate Scenario study cases are available, subject to a Critical Energy Infrastructure Information (CEII) request:

<https://nyiso.tfaforms.net/187>

Baseline Study Results

Baseline and Alternate Scenario study results are publicly available on the NYISO website under Public Policy Documents at

<https://www.nyiso.com/documents/20142/22968753/LI-PPTN-BaselineResults.xlsx/c91543ab-c542-3139-64a8-46357f886362>

Appendix B: Independent Consultant Report

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



SUBSTATION ENGINEERING COMPANY




Long Island Offshore Wind Export Public Policy Transmission Need

Technical Review Report

Public Version




Client:	NYISO		
Project:	Long Island Offshore Wind Export PPTN Project Evaluation		
Subject:	Final Report		
Document No.:	Long Island Offshore Wind Export Report	Revision:	2

The independent consultant project team (alternately, “review team,” “consultant,” “reviewer,” or “reviewers”) includes:

Project Lead: Joseph W. Allen, SECo Vice President


Lead Contributors:

<u>Tracy Hollands, SECo Manager of New York Operations</u>
<u>Barry Hart, SECo Principal Transmission Engineer</u>
<u>Prakash Pradhan, SECo Sr. Transmission Engineer</u>
<u>Elliot Fanshel, Protection & Control Supervising Engineer</u>
<u>Ed Kadylak, SECo Lead Substation Designer</u>
<u>Rusty Bascom, Electrical Consulting Engineers (ECE) Principal Engineer</u>
<u>Mallory Smith, GEI Consultants Project Manager</u>
<u>Joe Simone, GEI Consultants Senior Consulting Engineer</u>
<u>Curtis Compton, Ferreira Construction Vice President</u>
<u>YuYi Liao, Ferreira Construction Estimator</u>
<u>Jason Petersen, Ferreira Construction Field Construction Manager</u>


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1. Introduction

This report documents the technical evaluation of sixteen proposals submitted to the New York State Independent System Operator, Inc. (“NYISO”) to satisfy the Long Island Offshore Wind Export Public Policy Transmission Need (“Long Island PPTN”). On March 19, 2021, the New York Public Service Commission (“NYPSC”) directed the NYISO to solicit and evaluate solutions for a transmission need to increase the export capability of the LIPA-Con Edison interface to ensure the full output from at least 3,000 MW of offshore wind deliverable to the New York Control Area. In its April 5, 2022 Viability and Sufficiency Assessment Report, the NYISO reported that sixteen of the nineteen submitted proposals are viable and sufficient and satisfy the public policy transmission need criteria. Three Developers submitted proposals including LS Power Grid New York Corporation (“LS Power”), NextEra Energy Transmission New York (“NextEra”), and New York Power Authority (“NYPA”) together with NY Transco (“Transco”) (collectively “Propel NY”). The sixteen proposals evaluated were:

Proposal Number	Developer	Description
T035	LS Power	Atlantic Gateway
T036	NextEra	Renewable Connect- Core 1
T037	NextEra	Renewable Connect- Core 2
T038	NextEra	Renewable Connect- Core 3
T039	NextEra	Renewable Connect- Core 4
T040	NextEra	Renewable Connect- Core 5
T041	NextEra	Renewable Connect- Core 6
T042	NextEra	Renewable Connect- Core 7
T043	NextEra	Renewable Connect- Enhanced 1
T044	NextEra	Renewable Connect- Enhanced 2
T047	Propel NY	Propel NY Energy- Base Solution 1
T048	Propel NY	Propel NY Energy- Base Solution 2
T049	Propel NY	Propel NY Energy- Base Solution 3
T051	Propel NY	Propel NY Energy- Alternate Solution 5
T052	Propel NY	Propel NY Energy- Alternate Solution 6
T053	Propel NY	Propel NY Energy- Alternate Solution 7

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The primary scope and requirements of the Long Island PPTN, as identified and described in the NYPSC Order issued on March 19, 2021 is:

- 1) Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the State; and
- 2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.

The review team's evaluation focused on the following areas:

- Site review and "walk down" of proposed sites and routes that are accessible from public rights of way to evaluate their constructability and identify potential issues with the proposed design, siting and routing;
- Review of the environmental and permitting requirements for the project as proposed by Developers and identify gaps and issues, which were completed predominately using "desktop" analysis;
- Evaluate technical completeness and reasonableness of the proposed project schedules and sequencing plans, including identification of potential issues associated with delay in obtaining permits for and construction of the proposed project;
- Evaluate the Developers' cost estimates by preparing independent cost estimates for each project;
- Assessment of the constructability and viability of the projects as proposed by the Developers;
- Review, identify and estimate real estate requirements;
- Identify risks associated with the projects;
- Determine expandability of proposed project;
- Evaluate the resiliency of the proposed designs;
- Assess the Developers' plans for site control; and
- Evaluate the Developers' operating plans.

The review team's evaluation did not include further evaluation of Developers' qualifications or credentials beyond the screening performed earlier in the process.

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2. Executive Summary

This technical review focused primarily on schedule, cost, identifiable risks, the ability to expand on the project in the future, assessment of technical viability and thoroughness, site control plan and availability of rights of way (“ROWS”), and the operating plan provided by each Developer. Each Developer’s project was evaluated with the intent of providing consistency and based on the information offered by each Developer. Below is a brief summary of our findings. Please see the remainder of the report for further detail.

2.1. Schedule

Each Developer’s schedule for permitting and construction of its project was evaluated based on the review team’s collective experience with transmission projects sited by the NYPSC under Article VII of the New York State Public Service Law and constructed in New York State. A review of recent Article VII electric transmission projects timelines was completed to identify comparable schedules for obtaining permits and approvals needed to begin construction.

The team focused on task durations instead of specific dates.


The main drivers to the project schedule durations considered were:

- Article VII licensing effort,
- Procurement of major equipment,
- Real Estate requirements, and
- Construction requirements.

A summary of the expected durations for each Developer’s proposed scope is detailed in the table below:

Summary of Durations Expected

Proposal	Developer Proposed Total Duration	Estimated Minimum Duration (Note #1)
T035 LS Power Atlantic Gateway	70 Months	71 Months
T036 NextEra Core 1	74 Months	74 Months
T037 NextEra Core 2	88 Months	89 Months
T038 NextEra Core 3	88 Months	89 Months
T039 NextEra Core 4	88 Months	105 Months
T040 NextEra Core 5	74 Months	74 Months
T041 NextEra Core 6	74 Months	74 Months
T042 NextEra Core 7	93 Months	109 Months
T043 NextEra Enhanced 1	88 Months	105 Months
T044 NextEra Enhanced 2	93 Months	109 Months
T047 Propel Base Solution 1	72 Months	77 Months

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Proposal	Developer Proposed Total Duration	Estimated Minimum Duration (Note #1)
T048 Propel Base Solution 2	72 Months	77 Months
T049 Propel Base Solution 3	72 Months	77 Months
T051 Propel Alternate Solution 5	72 Months	77 Months
T052 Propel Alternate Solution 6	72 Months	77 Months
T053 Propel Alternate Solution 7	96 Months	101 Months

Note #1: "Minimum Duration" is calculated using the anticipated time for Article VII application preparation, the anticipated time for the Article VII approval process, and the anticipated time for construction of the project. For each of these time periods, the review team used the greater of the duration shown by the Developer or what the review team believes to be the minimum. The review team also assumed that the Developer's preparation of an application for an Environmental Management and Construction Plan (EM&CP) is underway when the Article VII Certificate of Environmental Compatibility and Public Need (CECPN) is granted by the New York State Public Service Commission. All these components will depend on the experience and the level of resources of the Developer and the complexity of the project. This is intended to highlight deficiencies in the schedules.

The schedules assume that the identified outages can be obtained as proposed by the Developers. The following table summarizes the required outages for each Developer:

	LS Power T035	NextEra T036-T043	Propel NY T047-T048 T051-T053
Number of Elements Requiring an Outage of at least 7 days	21	51-58	11
Number of Elements Requiring an Outage of 90 days or More	0	7	5
Maximum Number of Elements to Be Out Concurrently	0	5	2
345 kV Lines Being Impacted	Millwood-Buchanan (W97); Millwood-Wood St (W80); Millwood-Wood St (W81); Millwood-Buchanan (W98)	Dunwoodie-Pleasantville #1; Dunwoodie-Pleasantville #2 concurrent with Rainey-Mott Haven (Q11); Dunwoodie-Sprain Brook; Rainey-Ravenswood;	Rainey-Mott Haven (Q11); Rainey-Mott Haven (Q12); East Garden City- Sprain Brook (Y49)

Note: For this table an "element" is a transmission line, transformer, Phase Angle Regulator ("PAR") or main bus.

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2.2. Cost

In evaluating the construction cost of each project, Ferreira Construction (Ferreira) prepared independent cost estimates for each proposal, using applicable representative project data from recent historical projects where possible. Ferreira reviewed the Developers' proposals with the Developers cost estimates redacted. GEI Consultants, Inc. estimated the environmental licensing and permitting costs. The overnight capital cost estimates are shown below and categorized as New Facilities, Public Policy Transmission Upgrades ("Upgrade"), potential Network Upgrade Facilities ("NUF"), and Excluded Third Party ROW:

Independent Cost Estimate 2022 Dollars (\$1,000)					
Proposal	New (Excluding Third Party ROW) (A)	Upgrades (B)	NUFs (C)	Excluded Third Party ROW (D)	Overall Total (A+B+C+D)
T035- LS Power	\$5,920,452	\$39,078	\$27,576	\$11,068	\$5,998,174
T036- NextEra Core 1	\$3,230,250	\$1,135,143	\$0	\$1,520	\$4,366,913
T037- NextEra Core 2	\$3,627,277	\$1,256,718	\$0	\$1,726	\$4,885,722
T038- NextEra Core 3	\$4,251,741	\$1,207,700	\$0	\$1,435	\$5,460,876
T039- NextEra Core 4	\$4,457,495	\$1,269,941	\$0	\$1,445	\$5,728,881
T040- NextEra Core 5	\$3,609,641	\$1,084,129	\$0	\$1,431	\$4,695,200
T041- NextEra Core 6	\$4,447,548	\$1,130,640	\$0	\$6,993	\$5,585,181
T042- NextEra Core 7	\$13,750,171	\$1,123,557	\$0	\$7,150	\$14,880,878
T043- NextEra Enhanced 1	\$8,753,245	\$1,285,508	\$0	\$12,525	\$10,051,278
T044- NextEra Enhanced 2	\$16,127,943	\$1,329,334	\$0	\$8,432	\$17,465,709
T047- Propel Base 1	\$2,269,172	\$208,040	\$71,542	\$9,572	\$2,558,327
T048- Propel Base 2	\$1,965,833	\$92,758	\$107,911	\$10,232	\$2,176,735
T049- Propel Base 3	\$2,642,493	\$209,190	\$74,505	\$11,188	\$2,937,376
T051- Propel Alt 5	\$2,902,104	\$297,387	\$122,849	\$9,693	\$3,332,033
T052- Propel Alt 6	\$4,070,887	\$507,215	\$128,163	\$22,225	\$4,728,490
T053- Propel Alt 7	\$5,112,552	\$299,675	\$130,321	\$27,826	\$5,570,374

Notes:

- The estimates include a contingency rate of 20%. After recognizing the very large scale of these project, the review team determined that a 20% contingency should be adequate recognizing that some components may deviate from estimate more than others due to greater uncertainties but will tend to average out. The review team agrees that level of contingency is sufficient to allow for unanticipated costs and estimating accuracy to forecast a reasonable worst-case cost.

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- The independent cost estimates assume that the project can be built as designed. Costs associated with the identified potential risks are not included.

2.3. Risk


2.3.1. The review team completed a review of the potential risks associated with each proposal's schedule and costs, focusing on the most significant drivers, which include:

- Environmental and Permitting Concerns
- Property, Routing and Siting Concerns
- Design Concerns
- Construction and Operational Concerns

The following metrics were used to assign a risk ranking and risk score for each item under the significant drivers listed above:

	Very High (VH) Score 4	High (H) Score 3	Medium (M) Score 2	Low (L) Score 1
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 months	3-6 months	1-3 months	Less than 1 month

The probability, cost impact, and schedule impact scores were assigned to each risk item for each project. Using the highest scored project as a benchmark, the relative scores for each project were then plotted on the following heat map with the total probability score plotted against the sum of the schedule plus the cost scores. This provides a comparative view of the risks between projects. Refer to Section 4.3 and the risk register for more details on the risks identified for each project.


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RISK HEAT MAP

Probability Risk Will Occur	Very High (VH)				T043, T044
	High (H)			T037, T038, T041	T039, T042
	Medium (M)		T053	T036, T040	
	Low (L)		T035, T047, T048, T049, T051, T052		
		Low (L)	Medium (M)	High (H)	Very High (VH)
Cost and Schedule Risk					

2.4. Resiliency

To determine the relative resiliency of each project, the substations were reviewed with regards to the bus type, potential flooding risk, and potential inundation due to a hurricane. Each project was assigned a ranking score based on a set of criteria. Based on this scoring, the following table ranks the projects from most resilient (lowest score) to least resilient (highest score). Additional details are provided in Section 4.4.


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Total Resiliency Ranking

Ranking (Most to Least Resilient)	Proposal	Total Resiliency Score
1	T035- LS Power	13.5
2	T048- Propel NY Base 2	31.5
3	T036- NextEra Core 1	33.5
4	T047- Propel NY Base 1	34
5	T049- Propel NY Base 3	34
6	T052- Propel NY Alt 6	34
7	T051- Propel NY Alt 5	34
8	T037- NextEra Core 2	41.5
9	T042- NextEra Core 7	41.5
10	T053- Propel NY Alt 7	46
11	T041- NextEra Core 6	49.5
12	T040- NextEra Core 5	52
13	T038- NextEra Core 3	61
14	T043- NextEra Enhanced 1	63
15	T039- NextEra Core 4	66
16	T044- NextEra Enhanced 2	75.5


2.5. Expandability

2.5.1. The review team evaluated the potential for future expansion of the proposed transmission solutions to increase their capacity and line terminal positions for Point of Interconnection (“POI”) connections for offshore wind facilities (“OSW”) or future transmission lines. The table below provides a summary of available line terminal positions for each project. Refer to Section 4.5 for the full assessment.

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Number of Available Line Terminal Positions

Proposal	LS Power	
	<i>138kV Line Terminals</i>	<i>345kV Line Terminals</i>
T035	0	8
Proposal	NextEra	
	<i>138kV Line Terminals</i>	<i>345kV Line Terminals</i>
T036	3	10
T037	3	10
T038	5	11
T039	5	11
T040	6	11
T041	4	11
T042	4	13
T043	1	7
T044	4	9
Proposal	Propel NY	
	<i>138kV Line Terminals</i>	<i>345kV Line Terminals</i>
T047	1	1
T048	-	2
T049	-	1
T051	-	2
T052	1	2
T053	-	2

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2.6. Site Control and Real Estate

2.6.1. In all of the proposals, the following is common for the property rights acquisition process:

- All Developers propose to predominately use public thoroughfare for their transmission facilities.
- Some additional real estate is required for new substation construction.
- All Developers have completed preliminary routing of their proposed transmission lines.
- All Developers have documented plans to obtain the property rights (*i.e.*, site control) to implement their projects.
- Temporary construction easements are anticipated for all of the Developers but the level of detail for the location of the easement differ among the Developers' proposals.

2.6.2. The following was considered in determining a Developer's ability to obtain real property rights:

- Under New York State Transportation Corporation Law Article 2 Section 11 the Developers will have certain rights to install facilities on State and Local municipality property and acquire real estate by eminent domain if needed.

2.7. Operational Plan


2.7.1. The review team conducted a review of the Developers' operations and maintenance plans associated with the proposals. The review team did not identify any major flaws with the Developers' plans, and the plans are essentially the same.

2.7.2. For the non-incumbent Developer proposals, the following aspects are common:

- The Developers stated that all O&M activities will comply with required NERC regulations, and
- Proposed facilities will have real-time reporting of operating data.

2.7.3. The Developers proposed the following arrangements for Control Center services:

- LS Power proposes that the project will be operated by their control centers located in Colonie, New York and Clifton Park, New York.
- NextEra proposes minor modifications to the control center constructed in Albany, NY.
- Propel NY proposes that its projects would be operated from the Frederick R. Clark Energy Center Control Room, owned and operated by NYPA.

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3. Discussion of Proposals

Full, detailed descriptions and an overall project map for each proposal are provided in Appendix E of the NYISO's Public Policy Transmission Planning Report.

Brief descriptions of each proposed project are provided below:

3.1. LS Power Atlantic Gateway

- LS Power's proposal includes the following major components:
 - Proposed Transmission Lines
 - Longshore to Southgate-three underground 345 kV AC transmission lines traversing approximately 21 miles.
 - Southgate to Northgate- three underground/submarine ± 400 kV DC transmission lines traversing approximately 45 miles with 29 miles underground and 16 miles submarine.
 - Proposed Substations
 - Longshore Substation 345/138 kV substation 6 bay 345kV Breaker and a Half ("BAAH") Gas Insulated Substation "GIS".
 - Southgate Substation 345/138 kV substation 6 bay 345kV BAAH GIS with three ± 400 kV monopole Direct Current "DC" converter stations.
 - Northgate Substation 345 kV switchyard 5 bay BAAH GIS with three ± 400 kV monopole DC converter stations
 - Modifications to several 138kV transmission lines and substations.


3.2. NextEra

3.2.1. T036 -New York Renewable Connect – Core 1

Proposal includes the following major components:

Proposed Transmission Lines

- East Garden City to Dunwoodie is a 345 kV underground line traversing approximately 27.4 miles (8.7 miles submarine cable in LI Sound).
- East Garden City to Sprain Brook is a 345 kV underground line traversing approximately 27.7 miles (8.7 miles submarine cable in LI Sound).
- Ruland Road - Sprain Brook is a 345 kV underground line traversing approximately 33.1 miles (8.7 miles submarine cable in LI Sound).

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- East Garden City - Valley Stream Three 345 kV underground lines involving the removal of existing East Garden City - Valley Stream 138 kV circuits #1 and #2 to construct three new 345 kV lines (7.1 mi long)
- East Garden City to Jamaica 138 kV underground line (11.6 mi long)
- Proposed Substations:
 - Proposed East Garden City 345 kV substation is a 345 kV GIS switchyard, 7 bay - BAAH
 - Proposed Ruland Road 345/138 kV substation is a 345/138 kV GIS switchyard, 138 kV is a 4 bay - BAAH Configuration and tie back to the existing station and two 345/138 kV transformers.
 - Proposed Valley Stream 345/138 kV substation is a 345 kV GIS switchyard, 4 bay - BAAH Configuration with three 345/138 kV transformers
 - Dunwoodie 345 kV station GIS, 4 bay-BAAH
 - Rainey 345 kV GIS 2 bay- BAAH
 - Newbridge 345 kV GIS 4 bay-BAAH
 - Barrett 138 kV GIS 4 bay- BAAH
- Modifications to numerous 345 kV and 138 kV substations and 138 kV transmission lines.


3.2.2. T037 -New York Renewable Connect – Core 2

- Core 2 includes the facilities described in Core 1 plus the following:
 - Proposed Transmission Lines:
 - 345 kV Transmission from East Garden City to Farragut with Phase Angle Regulator (“PAR”) at East Garden City.
 - Proposed Substations:
 - Farragut substation is a new 345 kV GIS switchyard, 2 bay -BAAH

3.2.3. T038 -New York Renewable Connect – Core 3

Core 3 includes the facilities described in Core 1 plus the following:

- Proposed Transmission Lines
 - Northport –Dunwoodie is a 345 kV underground line traversing approximately 32.6 miles (25.4 miles submarine cable in LI Sound).

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- East Garden City - Farragut 345 kV line sharing the same duct bank as NextEra's proposed East Garden City - Jamaica 138 kV line (10.1 mi long). Northport 138 kV to existing Pilgrim 138 kV line

- Proposed Substations:

- Northport 345/138 kV station, including two 345/138 kV transformers
- Northport 138 kV GIS, 5 bays -BAAH
- Farragut 345 kV station GIS, 2 bay-BAAH

3.2.4. T039 – New York Renewable Connect – Core 4

Core 4 includes the facilities described in Core 1 plus the following:

- Proposed Transmission Lines

- New Farragut – Sprain Brook 345 kV line traversing approximately 24.9 miles (21.7 miles submarine cable in the Hudson River).
- New Northport – New Dunwoodie is a 345 kV underground line traversing approximately 32.6 miles (25.4 miles submarine cable in LI Sound).
- New Northport 138kV to Pilgrim

- Proposed Substations:

- New Northport 345/138 kV station with two new 345/138 kV transformers
- New Northport 138kV GIS, 5 bays -BAAH
- New Farragut 345kV station GIS, 2 bay-BAAH

3.2.5. T040 – New York Renewable Connect – Core 5


Core 5 includes the facilities described in Core 1 plus the following:

- Proposed Transmission Lines

- New Northport – New Dunwoodie is a 345 kV underground line traversing approximately 32.6 miles (25.4 miles submarine cable in LI Sound).

- Proposed Substations:

- New Northport 345/138 kV station with two new 345/138 kV transformers

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3.2.6. T041 – New York Renewable Connect – Core 6

Core 6 includes the facilities described in Core 1 plus the following:

- Proposed Transmission Lines
 - New Northport – New Dunwoodie is a 320 kV DC Line underground line
 - New Northport 138kV to Pilgrim
- Proposed Substations:
 - New Northport 320kV HVDC
 - New Sprain Brook 320kV HVDC
 - New Northport 138kV GIS, 5 bays -BAAH

3.2.7. T042 – New York Renewable Connect – Core 7


Core 7 includes the facilities described in Core 1 plus the following:

- Proposed Transmission Lines
 - New Northport HVDC – New Sprain Brook HVDC is a 320 kV DC Line underground line
 - New Northport 138kV to existing Pilgrim
 - New Buchanan HVDC to OSW HVDC 320kV DC Line submarine cable running down the Hudson River and NY Harbor.
- Proposed Substations:
 - New Northport 320kV HVDC
 - New Sprain Brook 320kV HVDC
 - Buchanan 2- 320kV HVDC
 - OSW Platforms 2-320kV HVDC
 - New Buchanan 345kV GIS, 3 bay- BAAH
 - New Northport 138kV GIS, 5 bays -BAAH

3.2.8. T043 – New York Renewable Connect – Enhanced 1

Enhanced 1 includes the facilities described in Core 1 plus the following:

- Proposed Transmission Lines
 - New Farragut to Sprain Brook 345 kV line traversing approximately 24.9 miles (21.7 miles submarine cable in the Hudson River).
 - New East Garden City - new Farragut 345 kV line sharing the same duct bank as NEXTERA's proposed East Garden City - Jamaica 138 kV line (10.1 mi long).


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- New Northport HVDC – New Sprain Brook HVDC is a 320 kV DC Line underground line
- New Buchanan HVDC to New Barrett HVDC 320kV DC Line submarine cable running down the Hudson River and NY Harbor.
- New Northport to Pilgrim 138kV
- Existing Pilgrim to Holbrook 138kV
- Proposed Substations:
 - New Northport 320kV HVDC
 - New Sprain Brook 320kV HVDC
 - New Buchanan 320kV HVDC
 - New Barrett 320kV HVDC
 - New Farragut 345kV station GIS, 2 bay-BAAH
 - New Buchanan 345kV GIS, 3 bay- BAAH
 - New Northport 138kV GIS, 5 bays -BAAH

3.2.9. T044 – New York Renewable Connect – Enhanced 2

Enhanced 2 includes the facilities described in Core 1 plus the following:

- Proposed Transmission Lines
 - New Farragut – Sprain Brook 345 kV line traversing approximately 24.9 miles (21.7 miles submarine cable in the Hudson River).
 - New East Garden City - new Farragut 345 kV line sharing the same duct bank as NEXTERA's proposed East Garden City - Jamaica 138 kV line (10.1 mi long).
 - New Northport HVDC – New Sprain Brook HVDC is a 320 kV DC Line underground line
 - New Buchanan HVDC to Offshore Wind Platform HVDC 2- 320kV DC Lines submarine cable running down the Hudson River and NY Harbor.
 - New Buchanan to Ramapo 345kV
 - New Northport 138kV to Pilgrim
 - Pilgrim to Holbrook 138kV
 - Newbridge to Locust Green 138kV
- Proposed Substations to be Owned by NextEra:
 - New Northport 320kV HVDC
 - New Sprain Brook 320kV HVDC

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- New Buchanan 2- 320kV HVDC
- New Offshore Wind Platforms 2- 320kV HVDC
- New Farragut 345kV station GIS, 2 bay-BAAH
- New Buchanan 345kV GIS, 3 bay- BAAH
- New Northport 138kV GIS, 5 bays -BAAH

3.3. Propel NY

3.3.1. T047 – Propel NY Energy Base Solution 1

Propel Base Solution 1 consists of the following major components:

- Proposed Transmission Lines:
 - Barrett to East Garden City 345 kV to Tremont 345 kV (Circuits Y-51) approximately 32.3 miles
 - Ruland Road to Shore Road 345 kV to Sprain Brook 345 kV (Circuits Y-56 & Y-57) crossing the Long Island Sound. Approximately 36.1 miles
 - East Garden City to Shore Road 345 kV (Circuit Y-53)
- Proposed Substations:
 - Barrett Substation (345/138 kV) – 345kV Straight Bus Air Insulated “AIS”
 - New Rochelle Substation (345 kV) – Transition station from submarine cables to terrestrial cables
 - Ruland Road Substation (345 kV/138 kV) -345kV AIS 6 breaker ring, 138kV AIS 6 breaker ring
 - Shore Road Substation (345-138 kV) -345kV 4 breaker ring GIS
- Upgrades and Modifications to some 345kV and 138kV substations and 138kV transmission lines.

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3.3.2. T048 – Propel NY Energy Base Solution 2


Propel Base Solution 2 consists of the major components:

- Proposed Transmission Lines:
 - Barrett to Tremont 345 kV (Circuit Y-51) approximately 25.7 miles
 - Ruland Road to Sprain Brook 345 kV (Circuit Y-53) approximately 36.2 miles
 - Syosset to Shore Road 138 kV approximately 11.3 miles
- Proposed Substations:
 - Barrett Substation (345/138 kV) – 345kV 4 breaker ring AIS
 - New Rochelle Substation (345 kV) – Transition station from submarine cables to terrestrial cables.
 - Ruland Road Substation (345 kV/138 kV) -345kV AIS 4 breaker ring, 138kV AIS 5 breaker ring
 - Shore Road Substation (345 kV) - Transition station from submarine cables to terrestrial cables.
- Upgrades and Modifications to some 345kV and 138kV substations and 138kV transmission lines.

3.3.3. T049 – Propel NY Energy Base Solution 3

Propel Base Solution 3 consists of the major components:

- Proposed Transmission Lines:
 - Barrett to East Garden City 345 kV to Tremont 345 kV (Circuits Y-51 & Y-54) approximately 32.3 miles
 - Ruland Road to Shore Road 345 kV to Sprain Brook 345 kV (Circuits Y-56 & Y-57) approximately 36.1 miles,
 - East Garden City to Shore Road 345 kV (Circuit Y-53) and 138 kV approximately 10.3 miles
- Proposed Substations:
 - Barrett Substation (345/138 kV) – 345kV 5 breaker ring AIS
 - New Rochelle Substation (345 kV) – Transition station from submarine cables to terrestrial cables
 - Ruland Road Substation (345 kV/138 kV) -345kV AIS 6 breaker ring, 138kV AIS 6 breaker ring
 - Shore Road Substation (345-138 kV) -345kV 4 breaker ring GIS

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- Upgrades and Modifications to some 345kV and 138kV substations and 138kV transmission lines.

3.3.4. T051 – Propel NY Energy Alternate Solution 5


Propel Alternate Solution 5 consists of the following major components:

- Proposed Transmission Lines:
 - Barrett to East Garden City 345 kV to Tremont 345 kV (Circuit Y-51) approximately 32.3 miles
 - Ruland Road to Shore Road 345 kV to Sprain Brook 345 kV (Circuits Y-56, Y-57 & Y-58) approximately 36.1 miles
 - East Garden City to Shore Road 345 kV (Circuit Y-53) approximately 10.3 miles
- Proposed Substations:
 - Barrett Substation (345/138 kV) – 345kV Straight Bus AIS
 - New Rochelle Substation (345 kV) – Transition station from submarine cables to terrestrial cables
 - Ruland Road Substation (345 kV/138 kV) -345kV AIS 6 breaker ring, 138kV AIS 6 breaker ring
 - 345 kV Shore Road Substation- 345kV 5 breaker ring GIS
- Upgrades and Modifications to some 345kV and 138kV substations and 138kV transmission lines.

3.3.5. T052 – Propel NY Energy Alternate Solution 6

Propel Alternate Solution 6 consists of the following major components:

- Proposed Transmission Lines:
 - Barrett to East Garden City 345 kV to Tremont 345 kV (Circuit Y-51) approximately 32.3 miles
 - Ruland Road to Shore Road 345 kV to Sprain Brook 345 kV (Circuits Y-56, Y-57 & Y-58) approximately 36.1 miles
 - East Garden City to Shore Road 345 kV (Circuit Y-53) approximately 10.3 miles
- Proposed Substations:
 - Barrett Substation (345/138 kV) – 345kV Straight Bus AIS


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- Eastern Queens Substation (345/138kV)- 345kV GIS 6 breaker ring, 138kV AIS 3 breaker ring, 138kV AIS 4 breaker ring
 - New Rochelle Substation (345 kV) – Transition station from submarine cables to terrestrial cables
 - Ruland Road Substation (345 kV/138 kV) -345kV AIS 5 breaker ring, 138kV AIS 5 breaker ring
 - 345 kV Shore Road Substation- 345kV 5 breaker ring GIS
- Upgrades and Modifications to some 345kV and 138kV substations and 138kV transmission lines.

3.3.6. T053 – Propel NY Energy Alternate Solution 7

Propel Alternate Solution 7 consists of the following major components:

- Proposed Transmission Lines:
 - Barrett to Tremont 345 kV (Circuit Y-51 & Y55) approximately 25.7 miles
 - Barrett to Brinkerhoff 345 kV (Circuit Y-52 and Y-54) to Dunwoodie 345 kV (Circuit Y-56) approximately 32 miles
 - Ruland Road to Sprain Brook 345 kV (Circuit Y-53) approximately 36.1 miles
 - Syosset to Shore Road 138 kV (S138-1) approximately 11.3 miles
 - Northport to Sprain Brook ±320 kV HVDC (Y-57) approximately 34.1 miles
- Proposed Substations:
 - Barrett Substation (345/138 kV) – 345kV 7 breaker ring AIS
 - Eastern Queens Substation (345/138kV)- 345kV GIS 8 breaker ring, 2-138kV AIS 4 breaker rings
 - New Rochelle Substation (345 kV) – Transition station from submarine cables to terrestrial cables
 - Ruland Road Substation (345 kV/138 kV) -345kV AIS 4 breaker ring, 138kV AIS 5 breaker ring
 - Shore Road Substation (345 kV) - Transition station from submarine cables to terrestrial cables.
 - HVDC Converter Station Northport and Northport 345 kV Substation
 - HVDC Converter Station Sprain Brook

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4. Evaluation


4.1. Schedule

The NYISO OATT section 31.4.8.1.8 provides the evaluation criteria for evaluating the schedules for the proposed projects.

The review team has completed an evaluation of the schedules submitted with each proposal. In its evaluation of the proposals, the review team leveraged its collective experience with the development, construction, and maintenance of transmission line and substation projects in New York or similar environments and compared the proposed schedules to actual Article VII electric transmission projects completed in New York.

The main drivers to the project schedule durations considered include:

- Article VII licensing process,
- Procurement of major equipment,
- Real Estate requirements, and
- Construction requirements.


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Accordingly, the review team’s analysis is based on standard historical durations for siting review. The review team’s conclusion for the Article VII process minimum durations are based upon “best case” assumptions as follows:

Article VII Process Minimum Durations

Task	Best Case Estimate for LI-PPTN	Best Case Estimate for LI-PPTN Projects that include Submarine Cable in Hudson or East River
Prepare and submit complete Article VII application (estimate)	8 months	9 months
PSC issues Certificate following Article VII application submission	15 months	24 months
Prepare and submit EM&CP (best case scenario assumes no major changes to design required in Certificate, and EM&CP application prepared during Article VII proceedings)	3 months	9 months
DPS review and approve EM&CP	3 months	4 months
Total: Best Case time duration from submission of Article VII application to the Start of Construction	21 months	37 months
Total: Best Case time duration from preparation of Article VII application to the start of Construction	29 months	46 months

An evaluation of the construction component of the proposals was completed by Ferreira Construction, and an evaluation of the licensing was completed by GEI Consultants.


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The project minimum durations identified by the review team assumes that preparation of the Article VII application and real estate procurement negotiations will begin at the time the project is awarded to the Developer and that any preliminary work required has already been completed by the Developer prior to that date. Likewise, the review team assumes that work to file the first EM&CP segment is complete prior to receipt of Article VII certificate. It is assumed that all federal or non-New York State permits and approvals can be obtained within the Article VII approval timeframe.

Procurement schedules were considered. It is noteworthy that HVDC systems can have very long manufacturing lead-times. One manufacturer, who responded to SECO's request for information, indicated that project durations for HVDC systems are currently at a minimum of 5 years after execution of the contract for an offshore/onshore system and a minimum of 4 years after execution of the contract for a wholly land-based system. A proposal that includes an HVDC system will require that the Developer work quickly with their equipment supplier(s) to ensure that its schedule can be met.

The review team considered the overall construction period for each proposal. Based on our collective experience, the review team assumed that construction of a new major substation could typically be completed in 20 to 24 months. An expansion of an existing major substation could typically be completed in 12 to 18 months. These durations are based on the assumption that the long lead major equipment (i.e. Power Transformers, PARs, GIS, HVDC, Power Cables, etc.) were procured early in the project development process such that they are available within the construction duration. Terrestrial underground cable in this geographical area could be installed at a rate of 50 to 100 ft. per day per crew and would depend on many factors including crew size, allowed shift duration, traffic control management, ground conditions and the accuracy of identifying underground obstructions. Ground penetrating radar and test pits would be good tools to help identify obstructions, but the methods and means are at the discretion of the respective Developer. Submarine cable installation is anticipated to take 2000 to 6000 ft. per day depending on many factors including the vessel and crew size, the number of cables installed per pass, underwater obstructions, water conditions, waves and wind affects and general weather conditions.

Impacts due to issues in obtaining real estate are not anticipated to significantly impact the schedule, as the majority of the requirements are in public thoroughfares and utility owned land. However, Developers need to be aggressive in pursuing rights to property and temporary construction easements immediately after project award.

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Regarding physical construction, the review team believes that all the proposed construction schedules offered by the Developers provide sufficient overall construction durations to complete the work although would be sensitive to the allocation of resources (number of crews, etc.). The review team assumes that due to the magnitude of work required on these projects, multiple contractors will be engaged and work in parallel in various locations to facilitate the schedules. Also, as noted in the risk register, many of these projects require significant outages of existing system components and will require careful planning and coordination by the Developer, incumbent utilities and the NYISO to meet their proposed in-service dates. Summarized below are the review team’s findings for each Developer:

4.1.1. LS Power


Proposal T035 – Atlantic Gateway

- LS Power has included about 7 months for Article VII application preparation. Based on experience, we would allocate 8 months.
- Overall Article VII approval process schedule seems adequate.
- Procurement schedule for major equipment seems adequate.
- Overall Construction schedule appears adequate.
- Their proposed project duration is about 70 months. We feel that is adequate for this project.

4.1.2. NextEra

Proposals T036, T037, T038, T039, T040, T041, T042, T043, T044 – Core Projects 1-7 and Enhanced Projects 1&2

- NextEra’s proposed schedule assumes that all its projects would meet the requirements for the expedited Article VII approval provisions of Case 14-T-0017, which applies to constructing transmission lines on existing rights of way (“ROWS”). These proposed projects include submarine cables in the Long Island Sound, Hudson River, East River, and/or the New York Bay. They also include several substation expansions as well as new “transition” stations where the submarine cables would connect to the terrestrial cables. The review team believes that it is not realistic to assume that NextEra’s projects will qualify for expedited Article VII approval.
- NextEra has also proposed that the PSC/DPS will simultaneously review and approve the CECPN and the EM&CPs. They will likely segment various portions of the project for the EM&CPs (i.e., terrestrial cable, submarine cable and substation expansions).

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The review team believes that it is not realistic to assume that the DPS will allow Article VII segmentation of these projects or that simultaneous review will occur.

- NextEra has included 10 months for Article VII application preparation. Based on the review team’s experience, 10 months appears to be adequate.
- Procurement Schedule for major equipment seems adequate.
- Overall construction schedules appear adequate. However, NextEra’s schedules show some substation work starting before EM&CP approval, which is unlikely to be allowed. Also, the review team assumes that the expedited approval process discussed above is not possible; therefore, it is assumed that the start of construction would be delayed from what is represented in NextEra’s milestone schedules.
- NextEra’s Core 1 (T036) project schedule duration is about 74 months. The review team believes that this overall project duration is adequate, but its schedule should be modified to a more realistic sequence.
- NextEra’s Core 2 (T037) and Core 3 (T038) projects schedule duration is about 88 months. The review team believes that this overall project duration is adequate, but its schedules should be modified to a more realistic sequence.
- NextEra’s Core 4 (T039) and Enhanced 1 (T043) projects schedule duration is about 88 months. Based on review of similar past projects, the review team believes that the project would require a minimum of 105 months to complete because of anticipated additional approval time required to install submarine cable in the Hudson River.
- NextEra’s Core 5 (T040) and Core 6 (T041) projects schedule duration is about 74 months. The review team believes that this overall project duration is adequate, but their schedule should be modified to a more realistic sequence.
- NextEra’s Core 7 (T042) and Enhanced 2 (T044) projects schedule duration is about 93 months. Based on review of similar past projects, the review team believes that the project would require a minimum of 109 months to complete because of anticipated additional approval time required to install submarine cable in the Hudson River.


4.1.3. Propel NY

Proposals T047, T048, T049, T051, T052, T053 – Base Solutions 1-3 and Alternate Solutions 5-7

- Each Propel NY proposal was submitted with two milestone schedules. One is their more aggressive schedule and the other is a “relaxed” schedule. Propel NY based their proposals (including their estimates) on the more aggressive “base” schedules. Therefore, this evaluation only considers Propel NY’s “base” schedules.

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- Propel NY has included about 5 months for Article VII application preparation for each project. Based on its collective experience, the review team would allocate 8 months.
- Propel NY has included about 19 months from Article VII application submittal to start of construction. Based on its collective experience, the review team would allocate 21 months.
- Procurement schedule for major equipment seems adequate for each project.
- Overall construction schedule appears adequate for each project.
- Propel NY's Base Solution 1 (T047), Base Solution 2 (T048), Base Solution 3 (T049), Alternate Solution 5 (T051) and Alternate Solution 6 (T052) projects schedule duration is 72 months. While the review team feels that schedule is within reason for the projects provided that Article VII application preparation is expedited and any complications in the approval process will delay the project. The review team's detailed evaluation suggests that 77 months is a more reasonable estimate.
- Propel NY's Alternate Solution 7 (T053) project schedule duration is 96 months. While the review team feels that schedule is adequate for the project provided that Article VII application preparation is expedited and any complications in the approval process will delay the project. The review team's detailed evaluation suggests that 101 months is a more reasonable estimate.


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Conclusion:

Based on our review we estimate the following total project durations:

Developer	Developer Proposed Total Duration	Estimated Minimum Duration (Note #1)
T035 LSPower Atlantic Gateway	70 Months	71 Months
T036 NextEra Core 1	74 Months	74 Months
T037 NextEra Core 2	88 Months	89 Months
T038 NextEra Core 3	88 Months	89 Months
T039 NextEra Core 4	88 Months	105 Months
T040 NextEra Core 5	74 Months	74 Months
T041 NextEra Core 6	74 Months	74 Months
T042 NextEra Core 7	93 Months	109 Months
T043 NextEra Enhanced 1	88 Months	105 Months
T044 NextEra Enhanced 2	93 Months	109 Months
T047 Propel Base Solution 1	72 Months	77 Months
T048 Propel Base Solution 2	72 Months	77 Months
T049 Propel Base Solution 3	72 Months	77 Months
T051 Propel Alternate Solution 5	72 Months	77 Months
T052 Propel Alternate Solution 6	72 Months	77 Months
T053 Propel Alternate Solution 7	96 Months	101 Months

Note #1: "Minimum Duration" is calculated using the anticipated time for Article VII application preparation, the anticipated time for the Article VII approval process, and the anticipated time for construction of the project. For each of these time periods, the review team used the greater of the duration shown by the Developer or what the review team believes to be the minimum. The review team also assumed that the Developer's preparation of an application for an EM&CP is underway when the Article VII certificate is granted by the PSC. All these components will depend on the experience and the level of resources of the Developer and the complexity of the project. This is intended to highlight deficiencies in the schedules.


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The schedules assume that the identified outages can be obtained as proposed by the Developers. The following table summarizes the required outages for each Developer.

DESCRIPTION	DEVELOPERS		
	LS Power T035	NextEra T036-T043	Propel NY T047-T048 T051- T053
Number of Elements Requiring an Outage of at least 7 days	21	51-58	11
Number of Elements Requiring an Outage of 90 days or more	0	7	5
Maximum Number of Elements to Be Out Concurrently	0	5	2
345kV Lines Being Impacted	Millwood-Buchanan (W97); Millwood-Wood St (W80); Millwood-Wood St (W81); Millwood-Buchanan (W98)	Dunwoodie-Pleasantville #1; Dunwoodie-Pleasantville #2 concurrent with Rainey-Mott Haven (Q11); Dunwoodie-Sprain Brook; Rainey-Ravenswood	Rainey-Mott Haven (Q11); Rainey-Mott Haven (Q12); East Garden City-Sprain Brook (Y49); Tremont-Sprain Brook (X28)

Note: For this table an "element" is a transmission line, transformer, PAR, or main bus.

The top-tier projects' outage plans, as provided by the Developers, were evaluated to identify least impactful to most impactful to the day-to-day operation of the New York grid. The top-tier projects appear in the order of being least impactful to most impactful in the table below.

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	Proposal
1	T035- LS Power
2	T048- Propel Base 2
3	T049- Propel Base 3
4	T051- Propel Alt 5
5	T052- Propel Alt 6
6	T036- NextEra Core 1
7	T040- NextEra Core 5

Risks identified with the proposed outages have been identified in the risk register.

4.2. Cost


4.2.1. The criteria for evaluating the cost of a proposed Public Policy Transmission Project is defined in the NYISO OATT section 31.4.5.1.2.

4.2.2. Estimation Methodology

Development of the independent cost estimates for the Long Island PPTN was an iterative process utilizing the collective expertise and experience of the review team and augmented by vendor budgetary quotations. Ferreira Construction (Ferreira) prepared the independent cost estimates based on its experience in constructing transmission and substation project and purchasing large volumes of transmission and substation materials annually.

A copy of each proposal was provided to Ferreira with all pricing information redacted. Ferreira familiarized itself with the proposals and completed field reviews of the transmission routes accessible via public ROWs. Ferreira employed Google Earth to evaluate facilities not accessible via public ROWs since access to the utilities' existing transmission and substation facilities was not available.

SECo solicited budgetary quotations from vendors for major equipment including transformers, circuit breakers, GIS equipment, Shunt Reactors, Series Reactors, VSC HVDC Systems, and terrestrial and submarine cables. Ferreira used historical data from projects that it had completed to develop unit pricing for the material supply rates and labor and

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equipment rates for equipment such as switches, instrument transformers, station service transformers, transmission components, conductors, grounding, and hardware.

The preliminary designs provided by each Developer were used as the basis for the cost estimates. SECo provided engineering input, as required to assist Ferreira in determining specific technical requirements and verifying the Developers' preliminary designs. Developers' designs were checked for general compliance with standard industry requirements, but they were not optimized.

Indirect cost percentages were derived by Ferreira from historical project data. Licensing and environmental cost estimates were developed for each project by SECo's subcontractor, GEI Consultants, Inc.

The draft cost estimates from Ferreira were reviewed by SECo for completeness and accuracy. SECo also compared the independent draft cost estimates for the proposals against each other for consistency in estimation approach across the proposals. Lastly, SECo compared the draft cost estimate for each proposal against the Developer's cost estimates as a check for their reasonableness. If large differences were observed between the independent cost estimate and the Developer's cost estimate, SECo investigated and determined whether the differences were justified. If the differences in the cost estimates resulted from calculation errors, they were corrected by Ferreira.


The cost estimates were prepared in accordance with the Association for the Advancement of Cost Engineering International Recommended Practice for Class 4 Accuracy. The expected accuracy range typically varies from a low of (-15% to -30%) and high of (+20% to +50%).

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Association for the Advancement of Cost Engineering Criteria for Class 4 Accuracy

ESTIMATE CLASS	MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES (Expressed as % of complete definition)	END USAGE (Typical purpose of estimate)	METHODOLOGY (Typical estimating method)	EXPECTED ACCURACY RANGE (Typical variation in low and high ranges)
Class 4	1% to 15%	Study or feasibility	Equipment factored or parametric models	L: -15% to -30% H: +20% to +50%

The final cost estimates include the contingency rate of 20%. After recognizing the very large scale of this project, it was decided that a 20% contingency should be adequate recognizing that some components may deviate from estimate more than others due to greater uncertainties but will tend to average out. The review team agrees that level of contingency is sufficient to allow for unanticipated costs and estimating accuracy to forecast a reasonable worst-case cost.


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4.2.3. Summary of Costs

A summary of the costs for all projects is provided, which includes new facilities, Public Policy Transmission Upgrades (“Upgrades”), potential Network Upgrade Facilities (“NUF”), and excluded third party ROW. SECo referenced the “Characterization of Project Facilities” document, posted by the NYISO on June 10, 2022, and reproduced in Appendix [] of the Public Policy Transmission Planning Process Report, in preparing its independent cost estimates. If there is a difference in the characterization of facilities by SECo as a new facility, Upgrades, NUFs, or excluded third party ROW below with the NYISO’s characterization of new facilities and Public Policy Transmission Upgrades or a developer’s identified of a potential NUF in a proposal, the NYISO’s final “Characterization of Project Facilities” document and/or developer’s characterization of potential NUF shall control.

Independent Cost Estimate 2022 Dollars (\$1,000)					
	New Facilities (Excluding Third Party ROW) (A)	Upgrades (B)	NUFs (C)	Total Excluded Third Party ROW for New Facilities (D)	Overall Total (A+B+C+D)
T035- LS Power	\$5,920,452	\$39,078	\$27,576	\$11,068	\$5,998,174
T036- NextEra Core 1	\$3,230,250	\$1,135,143	\$0	\$1,520	\$4,366,913
T037- NextEra Core 2	\$3,627,277	\$1,256,718	\$0	\$1,726	\$4,885,722
T038- NextEra Core 3	\$4,251,741	\$1,207,700	\$0	\$1,435	\$5,460,876
T039- NextEra Core 4	\$4,457,495	\$1,269,941	\$0	\$1,445	\$5,728,881
T040- NextEra Core 5	\$3,609,641	\$1,084,129	\$0	\$1,431	\$4,695,200
T041- NextEra Core 6	\$4,447,548	\$1,130,640	\$0	\$6,993	\$5,585,181
T042- NextEra Core 7	\$13,750,171	\$1,123,557	\$0	\$7,150	\$14,880,878
T043- NextEra Enhanced 1	\$8,753,245	\$1,285,508	\$0	\$12,525	\$10,051,278
T044- NextEra Enhanced 2	\$16,127,943	\$1,329,334	\$0	\$8,432	\$17,465,709
T047- Propel Base 1	\$2,269,172	\$208,040	\$71,542	\$9,572	\$2,558,327
T048- Propel Base 2	\$1,965,833	\$92,758	\$107,911	\$10,232	\$2,176,735
T049- Propel Base 3	\$2,642,493	\$209,190	\$74,505	\$11,188	\$2,937,376
T051- Propel Alt 5	\$2,902,104	\$297,387	\$122,849	\$9,693	\$3,332,033
T052- Propel Alt 6	\$4,070,887	\$507,215	\$128,163	\$22,225	\$4,728,490
T053- Propel Alt 7	\$5,112,552	\$299,675	\$130,321	\$27,826	\$5,570,374

Notes:

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- Cost estimates assume that a project can be built as designed. Costs associated with the identified potential risks are not included. The potential costs of the risks are described in Section 4.3 and the risk register.

4.2.4. Primary Cost Drivers


The primary design differences between the projects that increase the costs principally include:

- 4.2.4.1.** The number of existing substations being impacted, including new line terminals, new interties, remote end protection upgrades, and line terminal upgrades;
- 4.2.4.2.** The number of existing transmission lines being impacted, including line terminal relocations, line removal, and line upgrades;
- 4.2.4.3.** The number of proposed substations;
- 4.2.4.4.** The length of proposed or modified transmission lines;
- 4.2.4.5.** The use of HVDC technology; and
- 4.2.4.6.** The use of offshore HVDC.

The following table quantifies these primary design differences for each project.

Primary Cost Drivers Between Projects


Proposal	# of Existing SS Impacted	# of Existing TLine Impacted	# of Proposed SS	Miles of Proposed TLine- Terrestrial	Miles of Proposed TLine Submarine	# of HVDC Converter Systems	# of Offshore HVDC Converters
T035- LS Power	16	13	3	150	48	3	0
T036- NextEra Core 1	22	22	7	111	26	0	0
T037- NextEra Core 2	23	22	8	100	26	0	0
T038- NextEra Core 3	22	23	9	100	51	0	0
T039- NextEra Core 4	24	25	9	100	73	0	0
T040- NextEra Core 5	20	23	8	80	51	0	0
T041- NextEra Core 6	24	25	10	98	51	1	0
T042- NextEra Core 7	26	26	14	98	301	3	2
T043- NextEra Enh. 1	27	25	12	150	146	2	0
T044- NextEra Enh. 2	31	28	13	163	198	3	2
T047- Propel Base 1	12	8	6	90	9	0	0
T048- Propel Base 2	12	13	6	73	10	0	0
T049- Propel Base 3	12	7	6	91	9	0	0

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Proposal	# of Existing SS Impacted	# of Existing TLine Impacted	# of Proposed SS	Miles of Proposed TLine- Terrestrial	Miles of Proposed TLine Submarine	# of HVDC Converter Systems	# of Offshore HVDC Converters
T051- Propel Alt 5	13	9	6	75	9	0	0
T052- Propel Alt 6	12	9	7	133	9	0	0
T053- Propel Alt 7	14	11	9	123	34	1	0

4.2.5. T035 LS Power Cost Estimate:

	2022 Dollars w/o Contingency (\$1,000)
New Facilities- Substation	
1 - Longshore GIS Substation	\$214,993
2 - Southgate HVDC Converter Station and GIS Substation	\$1,071,656
3 - Northgate HVDC Converter Station and GIS Substation	\$1,107,190
New Facilities- Substations Total w/o Contingency	\$2,393,839
Excluded Third Party ROW	-\$10,942
New Facilities- Substations Total w/o Contingency and Third Party ROW	\$2,382,897
Upgrade Facilities- Substation	
9 - Pilgrim Road Substation_ Interconnection	\$22,421
Upgrade Facilities- Substation Total w/o Contingency	\$22,421
Network Upgrade Facilities- Substation	
4 - Millwood Interconnection (Includes substation and transmission interties)	\$452
6 - Ruland Road Substation Interconnection	\$10,931
7 - Pleasant Valley Substation_ Interconnection	\$834
8 - Buchanan Substation_ Interconnection	\$834
10 - Freeport Substation_ Interconnection	\$834
11 - Valley Stream Substation_ Interconnection	\$870
12 - Empire Offshore Wind Substation_ Interconnection	\$980
13 - Control Center Upgrade	\$89
Network Upgrade Facilities- Substation Total w/o Contingency	\$15,825
Total Substation w/o Contingency	\$2,432,085

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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
A Longshore-Southgate 345kV Onshore UG Cables - Three circuits-	\$821,144
B Southgate-Northgate 400kV DC Onshore UG Cables -Three circuits DC Cables 2 per circuit	\$1,177,522
C. Southgate to Northgate Offshore Submarine Cables- Three Circuits- DC Cables 2 per Circuit	\$552,274
New Facilities- Transmission Total w/o Contingency	\$2,550,939
Excluded Third Party ROW	-\$126
New Facilities- Transmission Total w/o Contingency and Third Party ROW	\$2,550,813
Upgrade Facilities- Transmission	
D. 138kV Upgrades	\$10,144
Upgrade Facilities -Transmission w/o Contingency	\$2,561,084
Network Upgrade Facilities - Transmission	
Millwood 345 kV Interconnection	\$5,310
	2022 Dollars w/ Contingency (\$1000)
Totals with Contingency	
New Facilities Contingency	\$986,742
Total New Facilities w/ Contingency	\$5,920,452
Upgrade Facilities Contingency	\$6,513
Total Upgrade Facilities w/ Contingency	\$39,078
Network Upgrade Facilities Contingency	\$6,441
Total Network Upgrade Facilities w/ Contingency	\$27,576
Total Excluded Third Party ROW for New Facilities	\$11,068
Overall Total	\$5,998,174

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4.2.6. NextEra Independent Cost Estimates

4.2.6.1. T036 NextEra Core 1


	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 29 New Ruland Road 345/138 kV Substation	\$81,249
Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	
2. Station 252 East Garden City 345/138 kV Substation	\$289,950
East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	
3. Station 48 Valley Stream 345/138 kV Substation	\$119,602
Valley Stream 138kV- (Ties to new Valley Stream Substation)	
New Facilities- Substations Total w/o Contingency	\$490,801
Excluded Third Party ROW	-\$1,158
New Facilities- Substations Total w/o Contingency and Third Party ROW	\$489,643
Upgrade Facilities- Substation	
4. Barrett 138 kV Substation Upgrades	\$64,374
5. Dunwoodie 345 kV GIS Substation	\$53,898
6. Elwood 138 kV Substation Upgrades	\$6,622
7. Jamaica 138 kV Substation Upgrades	\$1,687
8. Newbridge 345/138 kV GIS Substation Upgrades	\$74,882
9. Rainey 345kV GIS Substation Upgrades	\$38,288
10. Shore Road 138kV Substation Upgrades	\$11,720
11. Sprain Brook 345kV Substation Expansion	\$496,938
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$774,856
Total Substation	\$1,264,499

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Transmission	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Double circuit (EGC- Sprain Brook and Ruland To Sprain Brook 345 kV)	\$288,728
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (two cables each) EGC-Dunwoodie 345KV / EGC-Sprain Brook/Ruland-Sprain Brook 345KV	\$621,521
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuit (EGC to Sprain Brook/EGC To Dunwoodie 345 kV)	\$321,362
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit (EGC-Jamaica 138kv)	\$193,712
New Facilities- Transmission w/o Contingency	\$2,202,594
Excluded Third Party ROW	-\$362
New Facilities- Transmission w/o Contingency and Third Party ROW	\$2,202,232
Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724
Upgrade Facilities- Transmission w/o Contingency	\$171,243
Total Transmission	\$2,373,474


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	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$538,375
Total New Facilities w/ Contingency	\$3,230,250
Upgrade Facilities Contingency	\$189,045
Total Upgrade Facilities w/ Contingency	\$1,135,143
Network Upgrade Facilities Contingency	
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$1,520
Overall Total	\$4,366,913


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4.2.6.2. T037 NextEra Core 2


	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 29 New Ruland Road 345/138 kV Substation Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	\$108,607
2. Station 31 East Garden City 345/138 kV Substation East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	\$243,240
3. Station 48 Valley Stream 345/138 kV Substation Valley Stream 138kV- (Ties to new Valley Stream Substation)	\$119,602
New Facilities- Substations Total w/o Contingency	\$471,449
Excluded Third party ROW	-\$1,158
New Facilities- Substations Total w/o Contingency and Third Party ROW	\$470,291
Upgrade Facilities- Substation	
4. Barrett 138 kV Substation Upgrades	\$64,374
5. Dunwoodie 345 kV GIS Substation	\$53,898
6. Elwood 138 kV Substation Upgrades	\$6,622
7. Jamaica 138 kV Substation Upgrades	\$1,687
8. Newbridge 345/138 kV GIS Substation Upgrades	\$74,882
9. Rainey 345kV GIS Substation Upgrades	\$38,288
10. Shore Road 138kV Substation Upgrades	\$11,720
11. Sprain Brook 345kV Substation Expansion	\$496,938
12. Farragut 345kV Substation Expansion	\$101,278
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$876,134
Total Substation	\$1,346,425

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Transmission	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Double circuit (EGC- Sprain Brook and Ruland To Sprain Brook 345 kV)	\$288,728
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (two cables each) EGC-Dunwoodie 345KV / EGC-Sprain Brook/ Ruland-Sprain Brook 345KV	\$621,521
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuit (EGC to Sprain Brook/ EGC To Dunwoodie 345 kV)	\$321,362
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit (EGC-Farragut 345kv)	\$196,066
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit (EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$348,060
New Facilities- Transmission w/o Contingency	\$2,553,008
Excluded Third Party ROW	-\$568
New Facilities- Transmission w/o Contingency and Third Party ROW	\$2,552,440
Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724
Upgrade Facilities- Transmission w/o Contingency	\$171,243
Total Transmission	\$2,723,682


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	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$604,546
Total New Facilities w/ Contingency	\$3,627,277
Upgrade Facilities Contingency	\$209,475
Total Upgrade Facilities w/ Contingency	\$1,256,852
Network Upgrade Facilities Contingency	
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$1,726
Overall Total	\$4,885,722


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4.2.6.3. T038 NextEra Core 3


	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 29 New Ruland Road 345/138 kV Substation	\$108,607
Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	
2. Station 31 East Garden City 345/138 kV Substation	\$289,950
East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	
3. Station 48 Valley Stream 345/138 kV Substation	\$119,602
Valley Stream 138kV- (Ties to new Valley Stream Substation)	
13. Station 30 Northport 345/138kV AIS	\$82,353
14 - Northport 138kV GIS Substation	
New Facilities- Substations Total w/o Contingency	\$600,512
Excluded Third Party Right-of-Way	-\$1,158
New Facilities- Substations Total w/o Contingency and Third Party ROW	\$599,354
Upgrade Facilities- Substation	
4.Barrett 138 kV Substation Upgrades	\$64,374
5.Dunwoodie 345 kV GIS Substation	\$53,898
6.Elwood 138 kV Substation Upgrades	\$6,622
7.Jamaica 138 kV Substation Upgrades	\$1,687
8.Newbridge 345/138 kV GIS Substation Upgrades	\$74,882
9.Rainey 345kV GIS Substation Upgrades	\$38,288
10.Shore Road 138kV Substation Upgrades	\$11,720
11.Sprain Brook 345kV Substation Expansion	\$496,938
12. Farragut 345kV Substation Expansion	\$101,278
14.Pilgrim 138kV Substation Upgrades	\$1,697
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$877,831
Total Substation	\$1,477,185

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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (Northport To Dunwoodie 345 kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Double circuit (EGC- Sprain Brook and Ruland To Sprain Brook 345 kV)	\$288,728
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV	\$437,499
Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit (Double Tri-Core Cable)	\$583,146
Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Sprain Brook 345 kV)	\$175,226
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 11 - Pilgrim to Northport 138kV Onshore UG Cables -Single circuit (Pilgrim to Northport kV)	\$138,044
Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit (EGC-Farragut 345kv)	\$196,066
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit (EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$348,060
New Facilities- Transmission w/o Contingency	\$2,944,041
Excluded Third Party ROW	-\$277
New Facilities- Transmission w/o Contingency and Third Party ROW	\$2,943,763
Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp XX - Ruland Road - Newbridge 138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724
Upgrade Facilities- Transmission w/o Contingency	\$128,745
Total Transmission	\$3,072,509


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	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$708,623
Total New Facilities w/ Contingency	\$4,251,741
Upgrade Facilities Contingency	\$201,123
Total Upgrade Facilities w/ Contingency	\$1,207,700
Network Upgrade Facilities Contingency	
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$1,453
Overall Total	\$5,460,876


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4.2.6.4. T039 NextEra Core 4


	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 29 New Ruland Road 345/138 kV Substation Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	\$81,249
2. Station 31 East Garden City 345/138 kV Substation East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	\$272,191
3. Station 48 Valley Stream 345/138 kV Substation Valley Stream 138kV- (Ties to new Valley Stream Substation)	\$119,602
13. Station 30 Northport 345/138kV AIS 14 - Northport 138kV GIS Substation	\$82,353
New Facilities- Substations Total w/o Contingency	\$555,396
Excluded Third Party Right-of-Way	-\$1,158
New Facilities- Substations Total w/o Contingency and Third Party ROW	\$554,238
Upgrade Facilities- Substation	
4. Barrett 138 kV Substation Upgrades	\$64,374
5. Dunwoodie 345 kV GIS Substation	\$53,898
6. Elwood 138 kV Substation Upgrades	\$6,622
7. Jamaica 138 kV Substation Upgrades	\$1,687
8. Newbridge 345/138 kV GIS Substation Upgrades	\$74,882
9. Rainey 345kV GIS Substation Upgrades	\$38,288
10. Shore Road 138kV Substation Upgrades	\$11,720
11. Sprain Brook 345kV Substation Expansion	\$504,760
12. Farragut 345kV Substation Expansion	\$102,825
14. Pilgrim 138kV Substation Upgrades	\$1,697
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$887,200
Total Substation	\$1,441,438

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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (Northport To Dunwoodie 345 kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$288,728
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV	\$437,499
Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit (2 cables per circuit)	\$584,114
Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Sprain Brook 345 kV)	\$175,226
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 11 - Pilgrim to Northport 138kV Onshore UG Cables -Single circuit (Pilgrim to Northport kV)	\$138,044
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit (EGC-Jamaica 138kv)	\$193,712
Comp 87. Farragut to Sprain Brook Landing 345kV Offshore Submarine Cables - Single circuit (Farragut-Sprain Brook 345KV)	\$505,509
Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit (Farragut-Sprain Brook 345KV)	\$60,525
New Facilities- Transmission w/o Contingency	\$3,160,628
Excluded Third Party ROW	-\$287
New Facilities- Transmission w/o Contingency and Third Party ROW	\$3,160,341
Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp XX - Ruland Road - Newbridge 138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724

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	2022 Dollars w/o Contingency (\$1000)
Upgrade Facilities- Transmission w/o Contingency	\$171,243
Total Transmission	\$3,331,584
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$742,916
Total New Facilities w/ Contingency	\$4,457,495
Upgrade Facilities Contingency	\$211,689
Total Upgrade Facilities w/ Contingency	\$1,269,941
Network Upgrade Facilities Contingency	
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$1,4445
Overall Total	\$5,728,881

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4.2.6.5. T040 NextEra Core 5

	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 29 New Ruland Road 345/138 kV Substation	\$81,249
Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	
2. Station 31 East Garden City 345/138 kV Substation	\$272,191
East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	
3. Station 48 Valley Stream 345/138 kV Substation	\$119,602
Valley Stream 138kV- (Ties to new Valley Stream Substation)	
13. Station 30 Northport 345/138kV AIS	\$80,840
14 - Northport 138kV GIS Substation	
New Facilities- Substations Total w/o Contingency	\$553,882
Excluded Third Party ROW	-\$1,158
New Facilities- Substation w/o Contingency and Third Party ROW	\$552,724
Upgrade Facilities- Substation	
4.Barrett 138 kV Substation Upgrades	\$64,374
5.Dunwoodie 345 kV GIS Substation	\$53,898
6.Elwood 138 kV Substation Upgrades	\$6,622
7.Jamaica 138 kV Substation Upgrades	\$1,687
8.Newbridge 345/138 kV GIS Substation Upgrades	\$74,882
9.Rainey 345kV GIS Substation Upgrades	\$38,288
10.Shore Road 138kV Substation Upgrades	\$11,720
11.Sprain Brook 345kV Substation Expansion	\$496,938
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$774,856
Total Substation	\$1,327,580


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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (Northport To Dunwoodie 345 kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$288,728
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV	\$437,499
Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit (2 cables per circuit)	\$583,146
Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Sprain Brook 345 kV)	\$175,226
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit (EGC-Jamaica 138kv)	\$193,712
New Facilities- Transmission w/o Contingency	\$2,455,582
Excluded Third Party ROW	-\$273
New Facilities- Transmission w/o Contingency and Third Party ROW	\$2,455,310


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Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724
Upgrade Facilities- Transmission w/o Contingency	\$128,745
Total Transmission	\$2,584,055
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$601,607
Total New Facilities w/ Contingency	\$3,609,641
Upgrade Facilities Contingency	\$180,527
Total Upgrade Facilities w/ Contingency	\$1,084,129
Network Upgrade Facilities Contingency	
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$1,431
Overall Total	\$4,695,200


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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 29 New Ruland Road 345/138 kV Substation Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	\$81,249
2. Station 31 East Garden City 345/138 kV Substation East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	\$272,191
3. Station 48 Valley Stream 345/138 kV Substation Valley Stream 138kV- (Ties to new Valley Stream Substation)	\$119,602
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$379,120
13- Station 30a New Northport HVDC 1200MW Converter Station	\$373,951
14 - Northport 138kV GIS Substation	\$33,439
New Facilities- Substation w/o Contingency	\$1,259,552
Excluded Third Party ROW	-\$6,716
New Facilities- Substation w/o Contingency and Third Party ROW	\$1,252,836
Upgrade Facilities- Substation	
4. Barrett 138 kV Substation Upgrades	\$64,374
5. Dunwoodie 345 kV GIS Substation	\$53,898
6. Elwood 138 kV Substation Upgrades	\$6,622
7. Jamaica 138 kV Substation Upgrades	\$1,687
8. Newbridge 345/138 kV GIS Substation Upgrades	\$74,882
9. Rainey 345kV GIS Substation Upgrades	\$38,288
10. Shore Road 138kV Substation Upgrades	\$11,720
11. Sprain Brook 345kV Substation Expansion	\$490,576
15. Pilgrim 138kV Substation	\$1,697
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$770,191
Total Substation	\$2,023,027

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New Facilities- Transmission	
	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$158,624
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$132,603
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Two circuits (two lines, single circuit each) EGC-Dunwoodie 345KV / Ruland-Sprain Brook 345KV	\$437,499
Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-Sprain Brook 320KV DC	\$440,751
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Dunwoodie 345 kV)	\$175,226
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit (EGC-Jamaica 138kv)	\$193,712
Comp 11- Northport to Pilgrim	\$138,044
New Facilities- Transmission w/o Contingency	\$2,453,731
Excluded Third Party ROW	-\$277
New Facilities- Transmission w/o Contingency and Third Party ROW	\$2,453,454
Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724
Upgrade Facilities- Transmission w/o Contingency	\$171,243
Total Transmission	\$2,624,696

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	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$741,258
Total New Facilities w/ Contingency	\$4,447,548
Upgrade Facilities Contingency	\$188,206
Total Upgrade Facilities w/ Contingency	\$1,130,640
Network Upgrade Facilities Contingency	
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$6,993
Overall Total	\$5,585,181

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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 29 New Ruland Road 345/138 kV Substation	\$81,249
Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	
2. Station 31 East Garden City 345/138 kV Substation	\$272,191
East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	
3. Station 48 Valley Stream 345/138 kV Substation	\$119,602
Valley Stream 138kV- (Ties to new Valley Stream Substation)	
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$379,120
13- Station 30a New Northport HVDC 1200MW Converter Station	\$373,951
14 - Northport 138kV GIS Substation	\$33,439
16. - Comp 101 Buchanan 345kV & HVDC Substation Upgrade	\$799,716
Buchanan 345kV Substation	
New Facilities- Substations Total w/o Contingency	\$2,059,268
Excluded Third Party ROW	-\$6,871
New Facilities- Substation w/o Contingency and Third Party ROW	\$2,052,397
Upgrade Facilities- Substation	
4. Barrett 138 kV Substation Upgrades	\$64,374
5. Dunwoodie 345 kV GIS Substation	\$53,898
6. Elwood 138 kV Substation Upgrades	\$6,622
7. Jamaica 138 kV Substation Upgrades	\$1,687
8. Newbridge 345/138 kV GIS Substation Upgrades	\$74,882
9. Rainey 345kV GIS Substation Upgrades	\$38,288
10. Shore Road 138kV Substation Upgrades	\$11,720
11. Sprain Brook 345kV Substation Expansion	\$490,576
15. Pilgrim 138kV Substation Upgrades	\$1,697
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$770,191
Total Substation	\$2,822,588


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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$158,624
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$132,603
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Two circuits (two circuits, two cables each) EGC-Dunwoodie 345KV / Ruland-Sprain Brook 345KV	\$437,469
Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-Sprain Brook 320KV DC	\$440,751
Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Dunwoodie 345 kV)	\$175,226
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 11 - Pilgrim to Northport 138kV Onshore UG Cables -Single circuit (Pilgrim to Northport kV)	\$138,044
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit (EGC-Jamaica 138kv)	\$193,712
Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 & #2 320 kV)	\$6,907,895
Station 205 OSW Platform	
Comp 254 - Buchanan Landing-Buchanan Onshore 320kV DC UG Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 & #2 320 kV)	\$38,803
New Facilities- Transmission w/o Contingency	\$9,400,399
Excluded Third Party ROW	-\$279
New Facilities- Transmission w/o Contingency and Third Party ROW	\$9,400,121


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Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724
Upgrade Facilities- Transmission w/o Contingency	\$171,243
Total Transmission	\$9,571,363
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$2,290,503
Total New Facilities w/ Contingency	\$13,750,171
Upgrade Facilities Contingency	\$182,123
Total Upgrade Facilities w/ Contingency	\$1,123,557
Network Upgrade Facilities Contingency	
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$7,150
Overall Total	\$14,880,878

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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 253 New Ruland Road 345/138 kV Substation Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	\$108,607
2. Station 252 East Garden City 345/138 kV Substation East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	\$292,317
3. Station 48 Valley Stream 345/138 kV Substation Valley Stream 138kV- (Ties to new Valley Stream Substation)	\$119,602
12. Station 36a Sprain Brook HVDC 1200MW Converter Station Sprain Brook HVDC intertie to existing Sprain Brook 345kV	\$379,120
13. Station 30a New Northport HVDC 1200MW Converter Station New Northport HVDC intertie to existing Northport 138kV	\$373,951
14. Northport 138kV GIS Substation	\$33,439
16. Comp 155 Buchanan 1200 MW HVDC Converter Substation Buchanan 345kV Substation Buchanan HVDC intertie to existing Buchanan 345kV	\$355,355
18. New Barrett HVDC 1200MW Converter Station New Barrett HVDC intertie to existing Barrett 138kV	\$365,441
New Facilities- Substations Total w/o Contingency	\$2,027,832
Excluded Third Party ROW	-\$11,762
New Facilities- Substation w/o Contingency and Third Party ROW	\$2,016,070
Upgrade Facilities- Substation	
4. Barrett 138 kV Substation Upgrades	\$64,374
5. Dunwoodie 345 kV GIS Substation	\$53,898
6. Elwood 138 kV Substation Upgrades	\$6,622
7. Jamaica 138 kV Substation Upgrades	\$1,687
8. Newbridge 345/138 kV GIS Substation Upgrades	\$74,882
9. Rainey 345kV GIS Substation Upgrades	\$38,288
10. Shore Road 138kV Substation Upgrades	\$11,720
11. Sprain Brook 345kV Substation Expansion	\$504,766
15. Pilgrim 138kV Substation Upgrades	\$3,109


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	2022 Dollars w/o Contingency (\$1000)
17. Farragut 345kV Substation Expansion	\$109,709
19. Holbrook 138kV Substation Upgrades	\$3,584
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$899,087
Total Substation	\$2,915,157
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$288,728
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$132,603
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV	\$621,521
Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-Sprain Brook 320KV DC	\$440,751
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)	\$321,362
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 11 - Pilgrim to Northport 138kV Onshore UG Cables -Single circuit (Pilgrim to Northport)	\$138,044
Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit (EGC-Farragut 345kv)	\$196,066
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit (EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$348,060

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	2022 Dollars w/o Contingency (\$1000)
Comp 121 - Barrett To Barrett Landing Onshore 320kV DC UG Cables - Single circuit (New Barrett HVDC-New Buchanan HVDC 320KV)	\$60,050
Comp 70. Barrett Landing-Buchanan Landing 320kV DC Offshore Submarine Cables - Single circuit (New Barrett HVDC-New Buchanan HVDC 320KV)	\$1,179,371
Comp 91 - Buchanan Landing To Buchanan Onshore 320kV DC UG Cables - Single circuit (New Barrett HVDC-New Buchanan HVDC 320KV)	\$24,950
Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit Farragut-Sprain Brook 345KV	\$60,525
Comp 87. Farragut to Sprain Brook Landing 345kV Offshore Submarine Cables - Single circuit Farragut-Sprain Brook 345KV	\$490,782
Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit (Holbrook -Pilgrim 138kv)	\$198,980
New Facilities- Transmission w/o Contingency	\$5,279,064
Excluded Third Party ROW	-\$763
New Facilities- Transmission w/o Contingency and Third Party ROW	\$5,278,301
Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724
Upgrade Facilities- Transmission w/o Contingency	\$171,243
Total Transmission	\$5,449,544
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$1,458,874
Total New Facilities w/ Contingency	\$8,753,245
Upgrade Facilities Contingency	\$215,179
Total Upgrade Facilities w/ Contingency	\$1,285,508


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	2022 Dollars w/o Contingency (\$1000)
Network Upgrade Facilities Contingency	
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$12,525
Overall Total	\$10,051,278


4.2.6.9. T044 NextEra Enhanced 2

	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1. Station 253 New Ruland Road 345/138 kV Substation	\$108,607
Bethpage to Bagatelle 138kV Circuit (Tie into new Ruland Rd.)	
2. Station 252 East Garden City 345/138 kV Substation	\$292,317
East Garden City- Sprain Brook 345kV (Y49) (Connection between existing transformers and PARs tying into new substation)	
3. Station 48 Valley Stream 345/138 kV Substation	\$119,602
Valley Stream 138kV- (Ties to new Valley Stream Substation)	
12. Station 36a Sprain Brook HVDC 1200MW Converter Station	\$379,120
Sprain Brook HVDC intertie to existing Sprain Brook 345kV	
13. Station 30a New Northport HVDC 1200MW Converter Station	\$373,951
New Northport HVDC intertie to existing Northport 138kV	
14. Northport 138kV GIS Substation	\$33,439
16. - Comp 231 & 101 Buchanan 345kV GIS & HVDC Substation Upgrade	\$866,933
Buchanan HVDC intertie to existing Buchanan 345kV	
New Facilities- Substations Total w/o Contingency	\$2,173,970
Excluded Third Party ROW	-\$7,669
New Facilities- Substation w/o Contingency and Third Party ROW	\$2,166,300
Upgrade Facilities- Substation	
4. Barrett 138 kV Substation Upgrades	\$64,374
5. Dunwoodie 345 kV GIS Substation	\$53,898
6. Elwood 138 kV Substation Upgrades	\$6,622
7. Jamaica 138 kV Substation Upgrades	\$9,949
8. Newbridge 345/138 kV GIS Substation Upgrades	\$74,882


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	2022 Dollars w/o Contingency (\$1000)
9.Rainey 345kV GIS Substation Upgrades	\$38,288
10.Shore Road 138kV Substation Upgrades	\$11,720
11.Sprain Brook 345kV Substation Expansion	\$504,766
15.Pilgrim 138kV Substation Upgrades	\$3,109
17. Farragut 345kV Substation Expansion	\$109,709
18. Corona 138kV Substation Upgrades	\$18,464
19.Holbrook 138kV Substation Upgrades	\$3,584
20. Ramapo 345kV Substation Upgrades	\$10,478
East Garden City Upgrade- 138kV PAR	\$23,682
Ruland Rd- 138kV Breaker	\$1,792
Valley Stream 138kV- P5 Contingency	\$100
West Bus 138kV and Kings 138kV	\$873
Upgrade Facilities- Substation w/o Contingency	\$936,290
Total Substation	\$3,102,590

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	2022 Dollars w/o Contingency (\$1000)
New Facilities- Transmission	
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$157,188
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$288,728
Comp 4C (242)- Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$132,603
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV	\$621,521
Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-Sprain Brook 320KV DC	\$440,751
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)	\$321,362
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$291,557
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$328,526
Comp 11 - Pilgrim to Northport 138kV Onshore UG Cables -Single circuit (Pilgrim to Northport)	\$138,044
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit (EGC-Jamaica 138kv & EGC-Farragut 345kv, Corona-Jamaica)	\$350,246
Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit Farragut-Sprain Brook 345KV	\$60,525
Comp 87. Farragut to Sprain Brook Landing 345kV Offshore Submarine Cables - Single circuit Farragut-Sprain Brook 345KV	\$490,782
Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit (Holbrook -Pilgrim 138kv)	\$198,980
Comp 207 (Modify)- Corona to Jamaica (Corona-Metropolitan Ave) 138kV Onshore UG Cables -Single circuit (Corona to Jamaica 138kv)	\$43,395
Comp 207&249 - Metropolitan Ave-JA 138 and 345kV Onshore UG Cables -Double circuits (Corona-Jamaica 138kv & EGC-Farragut 345kv)	\$88,496

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	2022 Dollars w/o Contingency (\$1000)
Comp 249 - Jamaica To Farragut (Farragut-Metropolitan Ave) 345kV Onshore UG Cables - Single circuit (EGC-Farragut 345kv)	\$145,909
Comp 225&248 - Buchanan to Ramapo 345kV OH/UG Cables - Single circuit (New Buchanan - Ramapo 345 kV)	\$229,103
Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 & #2 320 kV)	\$6,907,895
Station 205 OSW Platform	
Comp 254 - Buchanan Landing-Buchanan Onshore 320kV DC UG Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 & #2 320 kV)	\$38,803
New Facilities- Transmission w/o Contingency	\$11,274,415
Excluded Third Party ROW	-\$763
New Facilities- Transmission w/o Contingency and Third Party ROW	\$11,273,652
Upgrade Facilities- Transmission	
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$111,098
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$21,249
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$4,462
Ruland Rd.-Newbridge 561	\$6,461
Ruland Rd.-Newbridge 562	\$6,724
Newbridge-Locust Grove 138kV	\$53,010
Upgrade Facilities- Transmission w/o Contingency	\$171,243
Total Transmission	\$11,444,895
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$2,687,990
Total New Facilities w/ Contingency	\$16,127,943
Upgrade Facilities Contingency	\$221,802
Total Upgrade Facilities w/ Contingency	\$1,329,334
Network Upgrade Facilities Contingency	

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	2022 Dollars w/o Contingency (\$1000)
Total Network Upgrade Facilities w/ Contingency	
Total Excluded Third Party ROW for New Facilities	\$8,432
Overall Total	\$17,465,709

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4.2.7. Propel NY

4.2.7.1. T047 Propel Base 1

	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1 - New Rochelle 345kV	\$11,069
2 - New Shore Road 345 kV	\$144,488
3 - New Ruland Road 345/138 kV	\$134,953
4 - New Barrett 345 kV	\$97,563
New Facilities- Substations Total w/o Contingency	\$388,072
Excluded Third Party ROW	-\$9,247
New Facilities- Substation w/o Contingency and Third Party ROW	\$378,825
Upgrade Facilities- Substation	
9 -Existing Holbrook 138 kV	\$1,589
10 -Existing Newbridge 138 kV	\$3,870
11 - Existing East Garden City 138 kV	\$12,807
12 - Existing Rainey 345 kV	\$8,187
13 - Existing East Garden City 345 kV	\$134,860
Barrett 138kV- P5 Contingency	\$100
Upgrade Facilities- Substation w/o Contingency	\$161,413
Network Upgrade Facilities- Substation	
5 - Existing 345 kV Tremont	\$27,309
6 - Existing Sprain Brook 345 kV	\$15,395
7 - Existing Ruland 138 kV	\$7,783
8 -Existing Shore Road 138 kV	\$7,804
Network Upgrade Facilities- Substation w/o Contingency	\$58,291
Total Substation w/o Contingency	\$598,529
New Facilities- Transmission	
BS1.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$148,981
BS1.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$455,279
BS1.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$176,241
BS1.5 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$299,546
BS1.6a. Shore Road to New Rochelle Offshore Submarine Cables -One circuit (2 cables per circuit)	\$223,943


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	2022 Dollars w/o Contingency (\$1000)
BS1.6a. Shore Road to New Rochelle Onshore UG Cables - One circuit (2 cables per circuit)	\$48,039
BS1.6b New Rochelle to Sprain Brook 345kV Onshore UG Cables -single circuit	\$160,448
New Facilities- Transmission w/o Contingency	\$1,512,477
Excluded Third Party ROW	-\$325
New Facilities- Transmission w/o Contingency and Third Party ROW	\$1,512,151
Upgrade Facilities- Transmission	
BS1.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit	\$11,892
Upgrade Facilities- Transmission w/o Contingency	\$11,892
Total Transmission w/o Contingency	\$1,524,043
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$378,195
Total New Facilities w/ Contingency	\$2,269,172
Upgrade Facilities Contingency	\$34,673
Total Upgrade Facilities w/ Contingency	\$208,040
Network Upgrade Facilities Contingency	\$13,251
Total Network Upgrade Facilities w/ Contingency	\$71,542
Total Excluded Third Party ROW for New Facilities	\$9,572
Overall Total	\$2,558,327


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4.2.7.2. T048 Propel Base 2

	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1 - New Rochelle 345kV	\$11,069
2 - New Shore Road 345 kV	\$36,683
3 - New Ruland Road 345/138 kV	\$116,415
4 - New Barrett 345 kV	\$114,278
New Facilities- Substations Total w/o Contingency	\$278,445
Excluded Third Party ROW	-\$9,985
New Facilities- Substation w/o Contingency and Third Party ROW	\$268,460
Upgrade Facilities- Substation	
5 - Existing East Garden City 345 kV	\$23,470
11 -Existing Holbrook 138 kV	\$1,589
12 - Existing Rainey 345 kV	\$4,319
13 - Existing East Garden City 138 kV	\$14,886
14- Existing Lake Success 138kV	\$20,183
Barrett 138kV- P5 Contingency	\$100
Upgrade Facilities- Substation w/o Contingency	\$64,548
Network Upgrade Facilities- Substation	
6 - Existing 345 kV Tremont	\$27,309
7 - Existing Sprain Brook 345 kV	\$15,775
8 - Existing Ruland 138 kV	\$11,345
9 -Existing Shore Road 138 kV	\$14,606
10- Existing Syosset 138kV	\$19,385
Network Upgrade Facilities- Substation w/o Contingency	\$88,421
Total Substation w/o Contingency	\$421,429


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New Facilities- Transmission	
	2022 Dollars w/o Contingency (\$1000)
BS2.1 Barrett to Tremont 345kV Onshore UG Cables -single circuit	\$469,483
BS2.2 Syosset to Shore Rd 138kV- Onshore UG- single circuit	\$168,589
BS2.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$299,546
BS2.4a. Shore Road to New Rochelle Offshore Submarine Cables -One circuit (2 cables per circuit)	\$223,943
BS2.4a. Shore Road to New Rochelle Onshore UG Cables - One circuit (2 cables per circuit)	\$48,039
BS1.6b New Rochelle to Sprain brook 345kV Onshore UG Cables -single circuit	\$160,381
New Facilities- Transmission w/o Contingency	\$1,369,981
Excluded Third Party ROW	-\$247
New Facilities- Transmission w/o Contingency and Third Party ROW	\$1,369,734
Upgrade Facilities- Transmission	
Misc. 903 Lake Success - Jamaica (uprate by reinforcing cooling)	\$12,751
Upgrade Facilities- Transmission w/o Contingency	\$12,751
Total Transmission w/o Contingency	\$1,382,485
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$327,639
Total New Facilities w/ Contingency	\$1,965,833
Upgrade Facilities Contingency	\$15,460
Total Upgrade Facilities w/ Contingency	\$92,758
Network Upgrade Facilities Contingency	\$17,684
Total Network Upgrade Facilities w/ Contingency	\$106,105
Total Excluded Third Party ROW for New Facilities	\$10,232
Overall Total	\$2,164,697


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4.2.7.3. T049 Propel Base 3

	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1 - New Rochelle 345kV	\$11,069
2 - New Shore Road 345 kV	\$144,488
3 - New Ruland Road 345/138 kV	\$134,597
4 - New Barrett 345 kV	\$158,483
New Facilities- Substations Total w/o Contingency	\$448,636
Excluded Third Party ROW	-\$9,985
New Facilities- Substation w/o Contingency and Third Party ROW	\$438,651
Upgrade Facilities- Substation	
9 -Existing Holbrook 138 kV	\$1,589
10 -Existing Newbridge 138 Kv	\$3,870
11 - Existing East Garden City 138 kV	\$12,807
12 - Existing Rainey 345 kV	\$8,187
13 - Existing East Garden City 345 kV	\$135,818
Barrett 138kV- P5 Contingency	\$100
Upgrade Facilities- Substation w/o Contingency	\$162,372
Network Upgrade Facilities- Substation	
5 - Existing 345 kV Tremont	\$27,309
6 - Existing Sprain Brook 345 kV	\$15,395
7 - Existing Ruland 138 kV	\$7,783
8 -Existing Shore Road 138 kV	\$9,936
Network Upgrade Facilities- Substation w/o Contingency	\$60,423
Total Substation w/o Contingency	\$661,446


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New Facilities- Transmission	
	2022 Dollars w/o Contingency (\$1000)
BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -double circuit	\$250,458
BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$455,279
BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$176,241
BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit	\$150,742
BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$299,546
BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables -One circuit (2 cables per circuit)	\$223,943
BS3.7a. Shore Road to New Rochelle Onshore UG Cables - One circuit (2 cables per circuit)	\$48,039
BS3.7b New Rochelle to Sprain brook 345kV Onshore UG Cables -single circuit	\$160,381
New Facilities- Transmission w/o Contingency	\$1,764,629
Excluded Third Party ROW	-\$448
New Facilities- Transmission w/o Contingency and Third Party ROW	\$1,764,181
Upgrade Facilities- Transmission	
BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit	\$11,954
Upgrade Facilities- Transmission w/o Contingency	\$11,954
Total Transmission w/o Contingency	\$1,776,135
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$440,566
Total New Facilities w/ Contingency	\$2,643,399
Upgrade Facilities Contingency	\$34,865
Total Upgrade Facilities w/ Contingency	\$209,190
Network Upgrade Facilities Contingency	\$12,085
Total Network Upgrade Facilities w/ Contingency	\$72,508
Total Excluded Third Party ROW for New Facilities	\$11,188
Overall Total	\$2,925,097


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4.2.7.4. T051 Propel Alternate 5

	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1 - New Rochelle 345kV	\$13,005
2 - New Shore Road 345 kV	\$175,850
3 - New Ruland Road 345/138 kV	\$134,930
4 - New Barrett 345 kV	\$97,539
New Facilities- Substations Total w/o Contingency	\$421,323
Excluded Third Party ROW	-\$9,985
New Facilities- Substation w/o Contingency and Third Party ROW	\$411,338
Upgrade Facilities- Substation	
9 -Existing Holbrook 138 kV	\$1,589
10 -Existing Newbridge 138 Kv	\$3,870
11 - Existing East Garden City 138 kV	\$14,786
12 - Existing Rainey 345 kV	\$8,187
13 - Existing East Garden City 345 kV	\$134,960
15 - Existing Northport 138 kV	\$27,886
16- Existing Oakwood 138 kV	\$1,854
Barrett 138kV- P5 Contingency	\$100
Upgrade Facilities- Substation w/o Contingency	\$193,232
Network Upgrade Facilities- Substation	
5 - Existing 345 kV Tremont	\$27,309
6 - Existing Sprain Brook 345 kV	\$34,455
7 - Existing Ruland 138 kV	\$7,783
8 -Existing Shore Road 138 kV	\$9,936
14 -Existing Syosset 138 kV	\$19,514
17 -Existing Syosset Transition 138 kV	\$1,961
Network Upgrade Facilities- Substation w/o Contingency	\$100,957
Total Substation w/o Contingency	\$705,527


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New Facilities- Transmission	
	2022 Dollars w/o Contingency (\$1000)
AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$148,981
AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$455,279
AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$176,241
AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$299,546
AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Two circuits (two cables per circuit)	\$388,521
AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Two circuits (Two cables per Circuit)	\$92,047
AS 5.6b. New Rochelle to Sprain brook 345kV Onshore UG Cables -double circuit	\$277,586
AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$168,589
New Facilities- Transmission w/o Contingency	\$2,006,789
Excluded Third Party ROW	-\$446
New Facilities- Transmission w/o Contingency and Third Party ROW	\$2,006,344
Upgrade Facilities- Transmission	
AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit	\$11,954
AS5.8. Syosset to Oakwood 138kV Onshore UG Cables -single circuit	\$42,638
Upgrade Facilities- Transmission w/o Contingency	\$54,591
Total Transmission w/o Contingency	\$2,061,381
	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$483,536
Total New Facilities w/ Contingency	\$2,901,218
Upgrade Facilities Contingency	\$49,565
Total Upgrade Facilities w/ Contingency	\$297,387
Network Upgrade Facilities Contingency	\$20,191
Total Network Upgrade Facilities w/ Contingency	\$121,149
Total Excluded Third Party ROW for New Facilities	\$9,693
Overall Total	\$3,319,755


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4.2.7.5. T052 Propel NY Alternate 6


	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1 - New Rochelle 345kV	\$13,005
2- Eastern Queens	\$228,268
2 - New Shore Road 345 kV	\$175,356
3 - New Ruland Road 345/138 kV	\$134,930
4 - New Barrett 345 kV	\$97,539
New Facilities- Substations Total w/o Contingency	\$649,097
Excluded Third Party ROW	-\$21,521
New Facilities- Substation w/o Contingency and Third Party ROW	\$627,576
Upgrade Facilities- Substation	
9 -Existing Holbrook 138 kV	\$1,589
10 -Existing Newbridge 138 Kv	\$3,870
11 - Existing East Garden City 138 kV	\$12,807
12 - Existing Rainey 345 kV	\$8,187
13 - Existing East Garden City 345 kV	\$156,415
Other Substation Upgrades- Valley Stream/Lake Success Remote End Protection	\$540
Barrett 138kV- P5 Contingency	\$100
Valley Stream 138kV- P5 Contingency	\$100
Upgrade Facilities- Substations Total w/o Contingency	\$183,608
Network Upgrade Facilities- Substation	
5 - Existing 345 kV Tremont	\$27,309
6 - Existing Sprain Brook 345 kV	\$33,812
7 - Existing Ruland 138 kV	\$7,783
8 -Existing Shore Road 138 kV	\$9,936
10- Existing Dunwoodie 345kV	\$5,365
14 -Existing Syosset 138 kV	\$19,514
Network Upgrade Facilities- Substation Total w/o Contingency	\$103,719
Total Substation w/o Contingency	\$914,903

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New Facilities- Transmission	
	2022 Dollars w/o Contingency (\$1000)
AS 6.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$148,981
AS 6.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$455,279
AS 6.3. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$176,241
AS 6.4. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$299,546
AS 6.5a. Shore Road to New Rochelle Offshore Submarine Cables - Two circuits (two cables per circuit)	\$388,521
AS 6.5a. Shore Road to New Rochelle Onshore UG Cables - Two circuits (Two cables per Circuit)	\$92,047
AS 6.5b. New Rochelle to Sprain brook 345kV Onshore UG Cables -double circuit	\$277,586
AS 6.6. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$168,589
AS6.8 East Garden City to Eastern Queens Onshore UG Cables -Double circuit	\$355,194
AS6.9 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit	\$403,551
New Facilities- Transmission Total w/o Contingency	\$2,765,534
Excluded Third Party ROW	-\$704
New Facilities- Transmission w/o Contingency and Third Party ROW	\$2,764,830
Upgrade Facilities- Transmission	
AS6.7. Syosset to Oakwood 138kV Onshore UG Cables -single circuit	\$42,638
AS6.10a- 901 Intercept Jamaica to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$16,938
AS6.10b- 903 Intercept Jamaica to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$60,102
AS6.11 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit	\$94,750
AS6.12 Lake Success - Jamaica (uprate by reinforcing cooling)	\$12,751
AS 6.13. East Garden City to Ruland 345kV Onshore UG Cables -single circuit	\$11,892
Upgrade Facilities- Transmission Total w/o Contingency	\$239,071
Total Transmission w/o Contingency	\$3,003,901


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	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$678,481
Total New Facilities w/ Contingency	\$4,070,887
Upgrade Facilities Contingency	\$84,536
Total Upgrade Facilities w/ Contingency	\$507,215
Network Upgrade Facilities Contingency	\$20,744
Total Network Upgrade Facilities w/ Contingency	\$124,463
Total Excluded Third Party ROW for New Facilities	\$22,225
Overall Total	\$4,702,565


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4.2.7.6. T053 Propel NY Alternate 7


	2022 Dollars w/o Contingency (\$1000)
New Facilities- Substation	
1 - New Rochelle 345kV	\$11,069
2 - New Shore Road 345 kV	\$36,683
3 - New Ruland Road 345/138 kV	\$116,415
4- Eastern Queens	\$235,941
5 - New Barrett 345 kV	\$159,479
6- New HVDC Converter Station at Sprain brook	\$384,139
7- New HVDC Converter Station at Northport	\$359,637
8- New 345kC Northport Substation	\$151,718
New Facilities- Substations Total w/o Contingency	\$1,455,081
Excluded Third Party ROW	-\$27,175
New Facilities- Substation w/o Contingency and Third Party ROW	\$1,427,906
Upgrade Facilities- Substation	
9 - Existing East Garden City 345 kV	\$23,470
12 - Existing Rainey 345 kV	\$4,319
16 -Existing Holbrook 138 kV	\$1,589
18 - Existing East Garden City 138 kV	\$14,886
19- Existing Lake Success 138kV	\$20,183
Other Substation Upgrades- Valley Stream/Oakwood Remote End Protection	\$540
Barrett 138kV- P5 Contingency	\$100
Valley Stream 138kV- P5 Contingency	\$100
Upgrade Facilities- Substations Total w/o Contingency	\$65,188
Network Upgrade Facilities- Substation	
10 - Existing 345 kV Tremont	\$27,309
11 - Existing Sprain Brook 345 kV	\$26,124
12 - Existing Ruland 138 kV	\$11,345
13 -Existing Shore Road 138 kV	\$14,606
14 -Existing Syosset 138 kV	\$19,514
15- Existing Dunwoodie 345kV	\$5,365
Network Upgrade Facilities- Substation Total w/o Contingency	\$104,263
Total Substation w/o Contingency	\$1,597,356

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New Facilities- Transmission	
	2022 Dollars w/o Contingency (\$1000)
AS 7.1 Barrett to Tremont (345 SCT)	\$469,483
AS 7.2 Syosset to Shore Road (138 SCT)	\$168,589
AS 7.3. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$299,546
AS 7.4a. Shore Road to New Rochelle Offshore Submarine Cables - one circuits (two cables per circuit)	\$223,943
AS 7.4a. Shore Road to New Rochelle Onshore UG Cables - Two circuits (Two cables per Circuit)	\$48,039
AS 7.4b. New Rochelle to Sprain brook 345kV Onshore UG Cables	\$160,381
AS 7.5 Barrett to Eastern Queens (345 DCT)	\$389,173
AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit	\$403,551
AS 7.7a Northport to New Rochelle-HVDC (320 SCT) submarine	\$446,253
AS 7.7b Shore Landing @ New Rochelle to Sprain Brook HVDC (320 SCT)	\$224,248
New Facilities- Transmission Total w/o Contingency	\$2,833,206
Excluded Third Party ROW	-\$651
New Facilities- Transmission w/o Contingency and Third Party ROW	\$2,832,555
Upgrade Facilities- Transmission	
AS7.8a- 901 Intercept Jamaica to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$16,938
A7.8b- 903 Intercept Jamaica to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$60,102
AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit	\$94,750
Misc. 903 Lake Success - Jamaica (uprate by reinforcing cooling)	\$12,751
Upgrade Facilities- Transmission Total w/o Contingency	\$184,541
Total Transmission w/o Contingency	\$3,017,096

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	2022 Dollars w/ Contingency (\$1000)
New Facilities Contingency	\$852,092
Total New Facilities w/ Contingency	\$5,112,552
Upgrade Facilities Contingency	\$49,946
Total Upgrade Facilities w/ Contingency	\$299,675
Network Upgrade Facilities Contingency	\$20,853
Total Network Upgrade Facilities w/ Contingency	\$125,116
Total Excluded Third Party ROW for New Facilities	\$27,826
Overall Total	\$5,537,343

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4.3. Risk

The review team completed an evaluation of the potential risks associated with each proposal and summarized the significant risks. The review team's evaluation was based on the team's collective experience with transmission line and substation projects in New York.

The significant drivers to the project risks that the review team considered were:

- Environmental and Permitting Concerns
- Property, Routing and Siting Concerns
- Design Concerns
- Construction and Operational Concerns


The following metrics were used to assign a risk ranking:

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

The most significant risks are summarized below. The detailed descriptions can be found in the risk register. The review team also recommends that a Risk Management Program be implemented in the execution of the project or projects selected by the NYISO. A Risk Management Program will highlight items such as safety management, materials management, construction operations, outage planning, QA/QC program, field inspection, and environmental controls that are critical in identifying both risk areas and specific mitigation strategies. It is also important that Risk Management become a living project component that is constantly monitored and updated as the project progresses.

4.3.1. Common Risks


The high risks that are common to all proposals are summarized below.

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High-Risks Common to all Proposals

Environmental and Permit Concerns- Common

Item #	Risk Title	Description
E-6	Construction Approval Restrictions – Long Island Sound Crossing	Time of year restrictions will likely be imposed. The Army Corps of Engineers will likely not allow work from Jan 1 – May 31 as a condition of their Nationwide Permit. Further, based on experience in Region 1 tidal waters, NYSDEC imposes a no-work window from Jan 1 – Sept 30. These combined restrictions would result in an allowable work window of Oct 1 – Dec 31.
E-7	Environmental Study Findings – NYSDEC Wetland and Adjacent Areas - Barrett	The wetlands and/or the 300' Tidal Wetland Adjacent Area at Barrett Substation are likely unavoidable by any project looking to construct in this area. Mitigation in the form of restoration is anticipated to be required.

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Property, Routing and Siting Concerns- Common

Item #	Risk Title	Description
P-2	Transmission line crossings	<p>Crossing of other transmission and distribution lines:</p> <p>creates additional schedule risk, to the extent an outage needs to be scheduled;</p> <p>creates additional operating risk, to the extent a single event could remove both elements from services; and creates cost risk to the extent unexpected costs such as raising, lowering, or relocating an existing line is required.</p>
P-3	Highway, Railroad Crossings, Navigable Waterway crossings	Crossing of Highways, Rail Roads, and Navigable Waterways creates additional risk to the project schedule and cost, depending on the requirements imposed during construction.
P-6	Routing Concern – Significant Route Changes	During the Article VII process, there is a risk that the final approved route may have material differences than the proposed route.

Generally, the risks associated with the transmission line crossings of highway, railroad and navigable waterway can be mitigated by early identification of all necessary crossings and frequent coordination with those responsible for the operation of the facilities being crossed.

4.3.2. Project-Specific Risks

Summarized below are the review team's most significant risk findings specific to each proposal. This is not all inclusive but is intended to highlight those items that pose the most critical risks to the completion of the projects. See the risk register for additional risk items.

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4.3.2.1. T035 LS Power:

Property, Routes, and Siting Concerns – LS Power

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
P-2	Property Site Concerns – Northgate substation - subsurface condition	Approximately 50% of the site could encounter rock during excavation and the site might require extensive slope protection. Site conditions will require further investigation to quantify. This could have high cost and schedule impact depending on volume of rock excavation and methods used (<i>i.e.</i> , blasting likely not allowed in this area)	H	M	L

Design Concerns – LS Power


Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-9	Design Concern – Ruland Rd.	The two proposed 138kV bay additions at Ruland Rd will interfere with an overhead 138kV strain bus to Banks #2 and #4, an overhead 69kV line running from the 69kV yard to air core reactors located in the 138kV yard, and an underground 138kV cable (Line 567)	H	M	L
D-10	Design Concern – Ruland Rd.	The one-line diagram shows that one of the 138kV ties from Southgate to Ruland Rd is going to terminate in the existing line terminal position for the 661 line to Pilgrim and the Pilgrim 661 line is to be relocated to the new bay addition. However, the Plot Plan is showing the underground connection between Southgate	H	M	L

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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
		to Ruland Rd terminating in the incorrect line terminal position. The existing 661 line exits overhead, not underground. Also, the proposed design does not provide a method for tying the existing OH 661 line into the new bay addition.			
D-11	Design Concern – Southgate	The west side of the proposed new Southgate substation borders the U.S. Post Office. There is a large discharge area of the property that is owned by the U.S. Post Office. The layout will need to be designed around this area.	H	L	L


Construction and Operational Concerns – LS Power

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
C-1	HVDC Lead-times	Due to high demand and equipment complexities, manufacturers are quoting lead times up to 4 years. With three units being installed, it would take an additional 6 months for the second unit and another six months for the third unit to be installed, tested, and commissioned.	H	L	H
C-2	Construction Concern – Millwood - Lines to Buchanan and Pleasant Valley Outage	Pleasant Valley (W80, W81) and Buchanan (W97, W98) exit the Millwood substation to a double circuit pole. The proposed design is showing two dead end structures being installed at this	H	H	H

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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
		location to make the transition from overhead to GIS. This installation will require the outages for both lines for an extended period of time. However, this is not accounted for in the Outage Plan.			
C-4	Construction Concern-Submarine Cable Landing Sites	Construction of the underground cables within a roadway requires approximately 30'-35' width for vehicles and equipment. Fox Island Rd near the submarine cable landing at Port Chester and Shore Rd near the submarine cable landing at Cold Springs Harbor are only 25' wide. Therefore, the entire roadways would be closed down during construction eliminating the only access to homes and businesses.	VH	VH	M

For Item C-4, the use of the alternate landing locations included in LS Power's proposal would mitigate the potential risks.

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4.3.2.2. NextEra


The following high or very high probability risks impact all of NextEra's proposals (T036-T044). Additional risks are provided in the risk register.

Environmental and Permit Concerns – All NextEra Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
E-9	Permitting Concern – Sprain Brook Bay Addition	345kV AIS Bay addition will require a very large and complex retaining wall to accommodate the 60'-90' drop-off. Permitting is expected to be difficult due to its impact on the residential neighborhood.	VH	M	VH
E-10	Permitting Concern- Cable Landing and Transition Substations at Davenport Park	Transition stations are required to interconnect the proposed 2- submarine cables per phase with the single terrestrial cable per phase. The proposed location where the submarine cables are coming ashore in the New Rochelle area at Davenport Park is in sensitive areas due to the park, beach, and adjacent country club. Construction of a transition station in these areas would have significant visual impact and may be subject to public opposition that may require relocation away from those sensitive areas.	H	M	H

It is anticipated that the required transition stations (Item E-10) will require a sizeable footprint (75 ft x 75 ft per circuit or 75 ft x 225 ft to accommodate all three circuits). Construction of transition stations in the identified sensitive areas are expected to have significant permanent visual impact, displace prevailing public use space, and could be subject to public opposition that may require relocation away from these areas. Temporary work areas would also result in use of the public spaces not affected by permanent above-ground facilities. A similar project constructed in the 1990s in this area (near


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Davenport Park in New Rochelle) required securing property and the construction of a sizeable indoor substation building with a "residential" façade to hide the station.


Property, Routes, and Siting Concerns – All NextEra Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
P-1	Property Acquisition Concern – Proposed 345 kV East Garden City Substation	The fenced area shown on the plot plan appears to impact the rear access for two adjacent commercial buildings.	H	M	L
P-2	Route Concern – East Garden City Line Exits	All the underground lines exiting East Garden City as shown in the map books are being routed in Stewart Ave, which is a busy road and congested with underground utilities. This will make it difficult to construct. There may not be sufficient space to install all of the lines.	H	H	H
p-3	Property Acquisition Concern – Sprain Brook	The addition of the three 345kV reactors are not entirely located within the utility's property. An adjacent property will need to be obtained.	H	L	L
P-4	Property Acquisition Concern – Transition Station at Hempstead Harbor	A transition station is required to interconnect the proposed 2-submarine cables per phase with the single terrestrial cable per phase. The proposed location for the submarine cables coming ashore at Tappen Beach for the New Rochelle-Hempstead Harbor line is an existing gas regulator station.	VH	VH	M


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Design Concerns – All NextEra Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-1	Design Concern – Jamaica	The proposed design does not meet Con Edison's design principle. There is not sufficient space to install the breaker at the location proposed by the Developer. Installing additional equipment on the roof of an existing building may result in the need for significant structural reinforcement. Spacing is extremely congested. The installation of GIS bus and equipment would require the existing, open air 138kV bus to be de-energized to safely conduct the work. Any future maintenance on the GIS bus, or replacement thereof due to electrical failure, would require other station components, such as open-air bus, to be de-energized. Per Con Edison's specification (CE-ES-2002-I), equipment needs to be arranged such that a failure does not jeopardize the continued operation of the facility.	H	M	L
D-9	Design Concern – 345kV PAR East Garden City	Manufacturer, who responded to SECO's budgetary quotation request, indicated that PAR of the proposed size (1050 MVA) cannot be built. Two 3-phase or three 1-phase parallel PARs are required. Design modification is required. There may not be sufficient space to accommodate additional equipment.	H	H	L


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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-14	Design Concern – Dunwoodie 345kV Existing Lines	The proposed location for the proposed 345kV GIS is in the ROW of three 345kV transmission lines. The design neither provides a means to relocate the existing three 345kV lines to allow the GIS building to be constructed nor a means to interconnect them into the proposed substation.	VH	VH	VH
D-16	Design Concern – Sprain Brook Bay	345kV AIS bay on the east side of the substation will be very difficult to construct due to the 90' drop off in this area. A very large and complex retaining wall would be necessary, which is not included in NextEra's design. It will be difficult to construct due to the limited access available and the estimated impact on the residential neighborhood.	VH	VH	H
D-17	Design Concern – Sprain Brook Proposed 345kV Line Exits	Due to a rock outcropping and a significant drop in elevation along the eastern and western side of the substation, it will be difficult to route an underground line, as proposed.	H	H	L
D-18	Design Concern – Potential Flooding or Inundation by Storm Surge	Some proposed substations are located in or near a 100-year or 500-year flood zone and/or have the potential for being inundated by a Category 1 storm. The proposals do not address how the substations will be designed to reduce the potential impact of flooding.	H	M	L
D-24	Design Concern – Rainey	The proposed design does not meet Con Edison's design principle. Due to the location of the existing access road, surrounding equipment and a	VH	VH	H

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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
		below grade oil tank, there is insufficient space between breakers 1E and 2E for the installation of a line terminal. Also, it will be very difficult to install the underground cable through the substation, as proposed, due to interference with existing tunnels that run between Rainey and the Ravenswood plant, transformer oil containment pits, and a security brick wall.			
D-25	Design Concern – Rainey	Due to the location of the existing access road and surrounding equipment, there is insufficient space between breakers 1W and 2W for the installation of a line terminal. Also, it will be very difficult to install the underground cable through the substation, as proposed, due to interference with existing cable trench and crossing through the area of the installed transformer and PAR located on the north side of the substation.	VH	VH	H
D-27	Design Concern – Ruland Rd.	There is insufficient space to add a breaker and line terminal position between breaker 1420 and the main bus.	H	M	M
D-28	Design Concern – Valley Stream	There is insufficient space to add a breaker and line terminal position between breakers 1430 and 1450.	H	M	M


The risk associated with the size of the PAR proposed by NextEra (Item D-9) also applies to the PARs being installed at Ruland Rd (T037 Core 2, T038 Core 3, T043 Enhanced 1 and T044 Enhanced 2) and at Buchanan (T044 Enhanced 2).

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NextEra's projects have between six and ten substations potentially impacted by flooding. As a result, NextEra's projects have received a risk score ranging from 19-45. See the Section 4.3 for more details.

Construction and Operational Concerns- All NextEra Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
C-1	Construction Concern – Installing underground cables in existing substations.	Installing proposed underground cables in the existing substations will be difficult without impacting existing foundations, conduit/trench systems, grounding, and bus work. Such installation could require additional outages, complex construction sequences and/or more expensive construction methods.	H	M	M
C-4	Construction Concerns – New Rochelle - Dunwoodie, New Rochelle - Sprain Brook	Davenport Ave and Church St. near the Davenport Park transition station are only 25' wide. Therefore, the entire roadway would be closed down during construction eliminating the only access to homes on the peninsula.	VH	VH	M
C-5	Construction Concern – Pipe Type Cables	One 345kV line and several 138kV transmission lines that are to be intercepted and tied into a proposed substation are oil-filled, pipe type cables. Tying into these types of cables requires managing the oil pressure and transitioning to EPR which adds an additional level of complexity to the construction. The extent of work required will be dependent on the cable's condition and age.	H	L	L

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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
C-6	Construction Concern – East Garden City 345kV Underground Cables to PARs	The proposed route for the underground cables to tie the existing 345kV PARs to the proposed GIS substation is along the west side of the substation heading north. Along the west side of the substation is a double-circuit overhead 138kV Lines 361 and 362 along with an overhead distribution circuit and communication circuit. There is a large double-circuit lattice structure for Lines 361 and 362 located in the northwest corner of the substation adjacent to a building. Due to these interferences, it will be very difficult to install the 345kV cables through this area.	H	L	L
C-7	Construction Concern – East Garden City 345kV Cables to Transformers and 138kV Cable to Proposed PAR	The proposed route for the underground cables to tie the existing 345kV transformers to the proposed GIS substation and the 138kV cable to the proposed PAR are exiting towards the east and then turning north. It will be difficult to exit the substation to the east since there are three gas lines (30", 20", 8"), one 138kV pipe-type cable (Line 463), and 8" water lines that run North-South along the east side of the station that will need to be crossed.	H	L	L

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Projects that include a proposed Farragut substation (T037 Core 2, T038 Core3, T039 Core 4, T043 Enhanced 1 and T044 Enhanced 2) have the following additional High or Very High risks:

Environmental and Permit Concerns – NextEra Farragut Proposals (T037, T038, T039, T043, T044)

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
E-4	Expansion into East River – New Farragut Substation	Pursuant to G304.2 V-Zone Construction Standards Section 6, (NYC, 2022) Development, including land-disturbing activities, seaward of the reach of mean high tide are prohibited. Therefore, to develop a pier in this area, which appears to be prohibited under the above code, a variance from the Board of Standards and Appeals would likely be needed.	H	M	H
E-7	Hudson River Routing – Tunnel Crossing: To Buchannan and Farragut-Sprain Brook 345kV	Hudson Tunnels including the Lincoln, Holland, NJ Transit and multiple PATH tunnels will need to be crossed. MTA, Port Authority of NY/NJ, and potential other owners are likely to require permission to cross these pieces of infrastructure.	H	H	H
E-11	Design Concern – Cable Landing and Transition Substations for Sprain Brook - Farragut	A transition station is required to interconnect the proposed 2-submarine cables per phase with the single terrestrial cable per phase. The proposed location where the submarine cables are coming ashore at Sprain Brook landing is for a marina with limited space. Construction of a transition station in this area is expected to have significant visual impact and be subject to public opposition that may require relocation away from those sensitive areas.	VH	H	H


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NYC Department of Small Business Services is the agency that issues permits for improvement and maintenance to waterfront structures and NYC-owned waterfront buildings. The proposed Farragut substation (Item E-4) into the East River appears to be in a mapped V-Zone based on the NYC Preliminary Flood Insurance Rate Maps. This has the potential of being a “no go” condition if a variance is not granted.

The Hudson River Routing (Items E-7) requires at least 10 tunnels to be crossed. This has the potential of being a “no go” condition if owners do not allow permission to cross. There does not appear to be much of a precedent for crossing these tunnels with linear infrastructure.

Design Concerns – NextEra Farragut Proposals (T037, T038, T039, T043, T044)


Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-20	Design Concern – Farragut Substation	The proposed design does not meet Con Edison’s design principle. The design requires the use of 345kV Gas Insulated Bus (GIB) and 345kV cables to connect the new substation to the existing facility. The installation of GIB would impede the replacement of existing Con Edison assets and the operations of the facility. Due to the below grade congestion around the Farragut substation, it is not feasible to install underground cables.	VH	H	H

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Projects that include a proposed Buchanan substation (T042 Core 7, T043 Enhanced 1, T044 Enhanced 2) have the following additional High or Very High risks:

Environmental and Permit Concerns- NextEra Buchanan Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
E-1C	Hudson River Routing – Cable and Pipeline Crossings: To Buchanan	There are a large number of existing pipelines/cables that must be crossed. ▪ Implications: Owner approval to cross these is likely required. Failure to get owner approval could be a no/go for a proposed route. Proper setbacks must be maintained to ensure no impacts to existing infrastructure.	VH	H	VH
E-3A	Contaminated Sediment – Hudson River from Battery to 200 miles North	This area is considered a Federal and NY State Superfund Site as a result of PCB contamination. ▪ Implication: Sediment sampling will be required and if impacts found, mitigation measures or rerouting could be required.	H	M	H
E-7	Hudson River Routing – Tunnel Crossing: To Buchanan and Farragut-Sprain Brook 345kV	Hudson Tunnels including the Lincoln, Holland, NJ Transit and multiple PATH tunnels will need to be crossed. MTA, Port Authority of NY/NJ, and potential other owners are likely to require permission to cross these pieces of infrastructure. There does not appear to be much of a precedent for crossing these tunnels with linear infrastructure.	H	H	H
E-8	Hudson River Routing – The Narrows: To Buchanan	The Narrows themselves and the areas immediately north pose a physical constraint in the number of cables coming into Upper NY Harbor. ▪ Implications: Given the limited amount of space that physically exists in the Narrows and setbacks between cables necessary for installation and maintenance, only a finite number of cables can be routed here.	H	H	H


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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
E-12	Permitting Concern – Cable Landing at Buchanan	The proposed landing for the cable going to Buchanan is at a commercial boat docking area. It may be difficult to obtain permits or construction may be limited to specific time of year due to potential impact to commercial operations parking.	H	M	M

The Hudson River Routing (Items E-1B) requires 33 cables and eight pipelines to be crossed (e.g., Lower New York Bay Lateral Pipeline, multiple Narrows Cables/Pipeline Areas, Neptune Transmission, Bayonne Energy Center, 3 Cross Hudson Pipelines, and a large number of telecom cables). Such crossings have the potential of being a “no go” condition if the owners do not allow permission to cross.

The cable being routed in the Hudson River PCB Superfund (Item E-3A) includes T039 - 19 miles, T042 - 41 miles, T043 - 59.5 miles, and T044 - 60 miles. The seafloor sediments in the areas surrounding Long Island and New York City contain known areas of contamination, as well as areas that are likely to contain contaminated sediments, as a result of historic industrial activities and discharges. The bottom disturbance necessary to install a submarine cable into the seafloor has the potential to resuspend these contaminated sediments. Agencies are likely to require avoidance and rerouting around areas of high contamination. This route has the potential of being a “no go” condition if not approved.

There are physical constraints to be able to bring cables through the Narrows to Buchanan (Item E-8) considering that an offshore wind project is already proposing to come in on the east side of Ambrose Channel going to Gowanus substation and other offshore wind projects are likely considering to directly interconnection from offshore wind sites to onshore substations in New York City. Ambrose Channel is the only deep draft channel to Upper New York Bay and is highly important to commerce. Routing within the channel and limiting its navigability is likely to be an issue. Depending on the timing of the transmission project and the offshore wind generation, cables may need to be routed outside the Ambrose Channel. The abutments of the Verrazano Bridge further reduce the size of this area.

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Design Concerns – NextEra Buchanan Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-6	Design Concern – Buchanan HVDC	Design calls for two HVDC stacked converters. However, the space shown is the same as for one converter. Additional property may be required for additional equipment for two converters.	H	H	L
D-7	Design Concern – Buchanan HVDC	The planned location for the HVDC station impacts an existing 345kV transmission line. The proposed design does not address the relocation of the line.	H	M	L

Projects that include HVDC facilities (T041 Core 6, T042 Core 7, T043 Enhanced 1, T044 Enhanced 2) have the following additional High or Very High risks:

Design Concerns – NextEra HVDC Proposals


Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-2	Design Concern – Northport HVDC	Design shows three 138kV lines tied to the HVDC converter. However, there is no means shown or space provided for tying these lines together and connecting to the HVDC interface transformers. Interconnecting the HVDC to 138kV results in high current (5000A), which increases the complexity of the design. The space allocated is the same as Sprain Brook which ties to one 345kV line.	H	M	L
D-5	Design Concern – Barrett HVDC	Design shows 3-138kV lines tied to the HVDC converter. However, there is no means shown nor space provided for tying these lines together and connecting to the HVDC Interface transformers. Interconnecting the HVDC to 138kV results in high current (5000A) which increases the	H	M	L

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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
		complexity of the design. The space allocated is the same as Sprain Brook, which ties to one 345kV line.			
D-6	Design Concern – Buchanan HVDC	Design calls for two HVDC stacked converters. However, the space shown is the same as for one converter. Additional property may be required for additional equipment for two converters.	H	H	L
D-7	Design Concern – Buchanan HVDC	The planned location for the HVDC station impacts an existing 345kV transmission line. The proposed design does not address the relocation of the line.	H	M	L

Construction and Operational Concerns – NextEra HVDC Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
C-2	HVDC Lead Times	Due to high demand and equipment complexities, manufacturers are quoting lead times up to 4 years for land based HVDC units and 5 years for sea based. It will take an additional six months to install, test and commission a second unit.	H	L	H
C-3	Property Site Concerns – Sprain Brook HVDC substation - subsurface condition	Approximately 90% of the site could encounter rock during excavation and the site might require extensive slope protection. Site conditions will require further investigation to quantify. This could have high cost and schedule impact depending on volume of rock excavation and methods used (i.e., blasting likely not allowed in this area)	H	M	L


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Projects that include a proposed Northport substation (T038 to T044) have the additional High probability risk:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-3	Design Concern – Northport	The underground cables running the length of the existing substation from the proposed transformers to the proposed GIS will be crossing several 12'-16' deep tunnels that run from the plant to the discharge area across the substation. Some are only 5'-6' below grade. These may cause interference with installing the proposed cables.	H	M	M

Projects that include Pilgrim (T038, T041 to T044) have the additional High probability risk:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-29	Design Concern – Pilgrim	There is insufficient space to add a breaker(s) and line terminal position(s) between breakers 1350, 1390, and 1310.	H	M	M

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4.3.2.3. Propel NY Risks


The following high or very high probability risks impact all of Propel NY's proposals (T047-T049 and T051-T053). Additional risks are provided in the risk register.

Design Concerns – All Propel NY's Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-9	Design Concern – Sprain Brook Proposed 345kV Line Exits	Due to a rock outcropping and a significant drop in elevation along the eastern and western side of the substation, it will be difficult to route an underground line, as proposed.	H	H	L
D-10	Design Concern – Tremont	The proposed GIS equipment, which Propel NY preliminary identified as a potential NUF, is to be installed at the location of the existing bus connections between Banks 1 and 2 and the tie to the 345kV X28 line to Sprain Brook. The construction of the proposed NUF would require an extensive outage of the transformers and the line. Also, the proposed location of the control house will cut off access to the northern side of the substation.	H	M	M

Construction and Operational Issues – All Propel NY's Proposals

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
C-12	Construction Concern – East Garden City 138kV Cable Installation	Proposals did not include proposed routes for intercepting the 138kV lines (462, 463, 465, and 262) to the proposed substation. However, due to the extensive underground facilities throughout the yard, along the east side (two 345kV cables, three gas lines (30", 20", 8") and one 138kV pipe-type cable (Line	H	M	M

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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
		463) and along the south side (one gas line 30", two 138kV cables 465 and 467, one 69kV cable, and the railroad track) it will be difficult to install the cables. Also, along the west and north sides there are overhead 138kV lines, 69kV lines, distribution circuits, and communication circuits.			

Projects that include a proposed substation at Eastern Queens (T052 Alternate 6 and T053 Alternate 7) have the following additional High risks:

Property, Routes, and Siting Concerns – Propel Eastern Queens:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
P-1	Property Acquisition Concern- Eastern Queens	Utility may be utilizing available property at the site. Therefore, sufficient property may not be available to build a new substation.	H	M	L

This could be mitigated by locating an alternative site for the Eastern Queens substation.

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Projects that include HVDC (T053 Alternate 7) have the following additional High risks:


Construction and Operational Concerns- Propel HVDC:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
C-7	Property Site Concerns – Sprain Brook HVDC substation-subsurface condition	Approximately 90% of the site could encounter rock during excavation and the site might require extensive slope protection. Site conditions will require further investigation to quantify. This could have high cost and schedule impact depending on volume of rock excavation and methods used (i.e., blasting likely not allowed in this area)	H	M	L
C-8	Schedule Concern – HVDC Lead Times	Due to high demand and equipment complexities, manufacturers are quoting lead times up to 4 years.	H	L	H

The independent cost estimate has assumed that rock excavation is required for the proposed Sprain Brook HVDC substation.

Property, Routes, and Siting Concerns – Propel HVDC:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
P-4	Property Acquisition Concern – Northport	The proposed location for the HVDC converter station at Northport is at a large above-ground oil storage tank farm. This site is currently in use as back up source for the power plant.	H	M	L

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Projects that include a proposed substation at Dunwoodie (T052 Alternate 6 and T053 Alternate 7) have the following additional Very High or High risks:

Design Concerns – Propel Dunwoodie:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-7	Design Concern – Dunwoodie - Insufficient Space for Line Terminal	Per the one-line diagram, the project plans to add a 345kV line terminal to the Eastern Queens substation between breakers 6 and 8. However, the plot plan shows the connection to the existing GIS equipment between breakers 3 and 4, and there is not sufficient space between breakers 6 and 8 to add the line terminal.	VH	H	H
D-8	Design Concern – Dunwoodie Proposed 345kV Line Exit	Due to a rock outcropping and a significant drop in elevation along the eastern side of the substation and ROW, it will be difficult to route an underground line out of the proposed GIS towards the east as proposed.	H	H	L

Projects that include the Barrett 138kV Breaker 1330 Replacement (T048 and T053) have the following additional High risks:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-11	Design Concern – Barrett 138kV	There is insufficient space to replace the existing breaker 1330 with a double PASS breaker due to a large lattice deadend structure that would interfere with this installation.	H	L	L


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Projects that include the East Garden City 345kV reactor addition (T048 and T053 have the following additional High risks:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-12	Design Concern- East Garden City Proposed 345kV Reactor	The location for the proposed 345kV reactor will interfere with a main cable trench and access road. In addition, the Plot Plan provided incorrectly shows the location of the existing Y49 line exit. Therefore, the proposed 345kV reactor will extend further to the west than shown. It may not fit within the fenced area of the substation. Also, the reactor would be installed under the double ckt overhead Lines 361 and 362, a distribution, and communication circuits.	H	H	M

Projects that included a PAR at Northport (T051) has the following additional High risk:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-15	Design Concern – Northport	The new 138kV underground cables running to the proposed PAR will cross several 12'-16' deep tunnels that run from the plant to the discharge area. Some are only 5'-6' below grade. Also, the underground termination being installed next to breaker 1450 is the location of one of the tunnels. These may cause interference with installing the proposed cables.	H	M	M

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Projects that include the Jamaica-Lake Success (903) Cooling (T048 and T052) have the following additional High risk:

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact
D-16	Design Concern – Jamaica- Lake Success 903 Line Cooling	The project requires forced cooling to be added to the lines to increase their capability. However, the required cooling equipment is not shown on the substation plans. There may not be adequate space to add the required equipment.	H	M	M

4.4. Resiliency and Security

4.4.1. Resiliency

The Presidential Policy Directive, PPD-21, defines resiliency as: “The ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions.” Resilience is measured as a response to an abnormal event. Some elements that impact a substation or transmission lines ability to withstand a major storm include:

1. Overhead lines or open-air substations that can be damaged from ice accumulation or downed poles due to high winds,
2. Flooding of substation’s equipment control cabinets making them inoperable,
3. Flooding of substation’s control houses impacting the protection and control systems, and
4. Flashover of insulators due to salt contamination.


Some elements that impact the ability to restore facilities after a disruption include:

1. Flooding of control houses impacting the station service systems, batteries, and communication to control centers, and
2. Downed trees or flooded streets and access roads can impact crews’ ability to restore damaged facilities.

Substations located along the coast, near the bank of a river, or near wetlands will be at a higher risk for flooding and being inundated by hurricanes.

4.4.1.1. Transmission Review

Transmission lines being proposed for all projects are underground or submarine cables. Therefore, these cables would not be subject to damage during a major ice storm or high winds.

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There is a potential risk to the submarine cables due to an anchor strike. However, this requires a cable burial risk assessment, which is usually very detailed and is not addressed in these preliminary designs.

4.4.1.2. Substation Bus Type Review

Proposed substations are being proposed as gas-insulated substations (“GIS”) or are using GIB. These facilities are less susceptible to damage due to high winds, blowing debris, or salt contamination. GIS facilities enclosed in buildings will also be less likely to be impacted by vandalism, such as gunfire or objects thrown into the substation.

The following table lists the proposed AIS substations, which would be at a higher risk to damage due to high wind conditions or salt contamination.

Proposed Air-Insulated Substations


Substation	LS Power	NextEra	Propel NY
Barrett or Longshore	T035- See Note 1	All- See Note 1	All
East Garden City	N/A	All- See Note 1	T047, T049, T051
Eastern Queens	N/A	N/A	T051, T052- See Note 1
Northport	N/A	T038, T039, T040- See Note 1	-
Ruland Rd	T035- See Note 1	All- See Note 1	All
Shore Rd	N/A	All	T048, T053

Note 1: Portions of the proposed facilities are AIS.

Each proposed substation was reviewed to determine its potential risk of damage due to the type of bus work installed and a ranking score assigned based on the following criteria:

Bus Type Ranking

0	All Building Enclosed GIS
1	All Outdoor GIS
2	Partial AIS & Enclosed GIS
3	Partial AIS & Outdoor GIS
4	All AIS

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4.4.1.3. Flood Risk Review


The following table lists substations that are located within or adjacent to a 100-year flood zone:

100 Year Flood Zone Table

Substation	LS Power	NextEra	Propel NY
Barrett (Longshore)	T035	All	All
Farragut	N/A	T037, T038, T039, T043, T044	N/A
Rainey	N/A	All	-
Northport	N/A	T038 to T043	See Note 1
Buchanan	N/A	T043, T044, T045	
Tappen Beach- Transition from Submarine to Terrestrial Cable Location	N/A	All	See Note 2
Long Beach- Transition from Submarine to Terrestrial Cable Location	N/A	T043	N/A
New Rochelle	N/A		All

Note 1: Propel NY selected location for their proposed 345/138 kV substation and the HVDC yard at Northport is not adjacent to the 100-year flood zone.

Note 2: Propel NY's transition from submarine to terrestrial cable occurs in a below ground transition vault.

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Each substation was reviewed to determine its potential risk of a flood occurring and was assigned a ranking based on the following criteria:

Based Flood Elevation Ranking

0	no flood zone in area
1	adjacent to flood zone
2	500-year flood/storm
3	partially in AE
4	in AE (waves less than 3')
5	in VE (waves greater than 3')

Where:

“AE” refers to a FEMA flood zone with waves less than 3 feet. The number after "AE" is the elevation in feet referenced to North American Vertical Datum of 1988 that flooding is projected at that particular site, referred to as the Based Flood Elevation (BFE).


“VE” refers to a FEMA flood zone with waves greater than 3 feet. The number after "VE" is the elevation in feet referenced to North American Vertical Datum of 1988 that flooding is projected at that particular site, referred to as the BFE.

4.4.1.4. Hurricane Risk Review

Sea, Lake and Overland Surges from Hurricanes (SLOSH) is a model developed by National Weather Service that shows which areas will be inundated by a specific category hurricane. A substation that is susceptible to being inundated with a Category 1 or 2 hurricane has lower resilience than ones that are not impacted until a storm reaches a Category 3 or 4. The following summarizes substations that are susceptible to a Category 1 or 2 storm.

Substations Susceptible to Category 1 or 2 Hurricanes

Substation	LS Power	NextEra	Propel NY
Barrett (Longshore)	T035	All	All
Farragut	N/A	T037, T038, T039, T043, T044	N/A
Rainey	N/A	All	N/A
Northport	N/A	T038 to T043	T051, T053
Buchanan	N/A	T043, T044, T045	

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Substation	LS Power	NextEra	Propel NY
Tappen Beach - Transition from Submarine to Terrestrial Cable Location	N/A	All	N/A
Long Beach - Transition from Submarine to Terrestrial Cable Location	N/A	T043	N/A
New Rochelle	N/A		All
Shore Rd - Transition from Submarine to Terrestrial Cable Location	N/A	All	N/A

Each proposed substation site was evaluated to determine the probability of it being inundated by a hurricane based on the following criteria:


SLOSH Ranking

0	No inundation
1	inundated in category 4 storm
2	inundated in category 3 storm
3	inundated in category 2 storm
4	inundated in category 1 storm

4.4.1.5. Resiliency Results

A score was assigned to each substation depending on its potential risk of being impacted by a flood or hurricane and its bus type.

Based on this scoring the following table ranks the projects from most resilient (lowest score) to least resilient (highest score):

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Total Resiliency Ranking

Ranking (Most to Least Resilient)	Proposal	Total Resiliency Score
1	T035- LS Power	13.5
2	T048- Propel NY Base 2	31.5
3	T036- NextEra Core 1	33.5
4	T047- Propel NY Base 1	34
5	T049- Propel NY Base 3	34
6	T052- Propel NY Alt 6	34
7	T051- Propel NY Alt 5	34
8	T037- NextEra Core 2	41.5
9	T042- NextEra Core 7	41.5
10	T053- Propel NY Alt 7	46
11	T041- NextEra Core 6	49.5
12	T040- NextEra Core 5	52
13	T038- NextEra Core 3	61
14	T043- NextEra Enhanced 1	63
15	T039- NextEra Core 4	66
16	T044- NextEra Enhanced 2	75.5

4.4.2. Security

Developers would be required to design to existing standards such as IEEE Standard 1402 “Guide for Physical Security of Electric Power Substations,” IEEE Standard C37.240 “Standard Cybersecurity Requirements for Substation Automation, Protection, and Control Systems,” and develop security plans in accordance with the North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP) requirements.

In response to recent security breaches at substations in North Carolina, South Carolina, and Washington, the Federal Energy Regulatory Commission (FERC) directed a study of the effectiveness of existing reliability standards for the physical security of the nation’s power grid and determine whether they need to be improved. Standards resulting from this study should be implemented for the proposed project that is identified as the more efficient or cost-effective solution to the Long Island PPTN.

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4.5. Expandability


In evaluating the expandability of a proposed regulated Public Policy Transmission Project, the NYISO OATT section 31.4.8.1.4 provides that the NYISO will consider a project's impact on future construction and the extent to which any subsequent expansion will continue to use the project within the context of system expansion.

The review team conducted a review of the expansion capability of the Developers' proposals. The review centered predominately on the Developers' one lines that showed the availability of open breaker positions for future line terminal positions.

4.5.1. Substation

The review centered predominately on the Developers' one-line diagrams that showed the availability of future line terminal positions. The Developer's plot plans were reviewed to confirm if there was sufficient space to add the terminal additions identified on the one-line diagrams. If there is not sufficient space within the proposed fenced area or between breakers for adding a new line position, then they were not counted as a spare position towards expandability. The potential for expanding the substation and/or installing additional bays not identified on the one-line diagram was not considered. The tables below provide an overall summary of the number of spare line terminal positions provided for each Developer's proposal.

Proposal	LS Power	
	<i>138kV Line Terminals</i>	<i>345kV Line Terminals</i>
T035	0	8
Proposal	NextEra	
	<i>138kV Line Terminals</i>	<i>345kV Line Terminals</i>
T036	3	10
T037	3	10
T038	5	11
T039	5	11
T040	6	11
T041	4	11
T042	4	13
T043	1	7
T044	4	9

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Proposal	Propel NY	
	<i>138kV Line Terminals</i>	<i>345kV Line Terminals</i>
T047	1	1
T048	-	2
T049	-	1
T051	-	2
T052	1	2
T053	-	2

4.5.2. Transmission

Since all new terrestrial transmission lines are being installed underground and primarily routed in existing ROW, none of the Developers provided space for the installation of additional transmission lines.

4.6. Site Control and Real Estate

4.6.1. Site Control


In evaluating the extent to which a Developer of a proposed regulated Public Policy Transmission Project has the property rights (*i.e.*, site control) to implement its project, the NYISO OATT section 31.4.8.1.7 specifies the criteria to be used for evaluating site control.

The review team conducted a review of the Developers' property rights acquisition plans contained in their proposals. The review centered on the Developers' information and plans presented in their proposals and additional information provided in response to NYISO requests for information.

In all proposals, the following is common for the property rights acquisition process:

The following was considered in determining a Developer's ability to obtain real property rights:

- New York Public Service Law § 70 approval will be required from the NYPSC before an electric corporation may transfer or lease its assets as further discussed in the permitting plan.
- Under New York State Transportation Corporation Law Article 2 Section 11, Developers will have certain rights to install facilities on State and Local municipality property and

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acquire real estate by eminent domain if needed after certification of a route by the NYPSC.

4.6.2. Real Estate Analysis

A review of the proposed routing for the transmission lines and substations was completed to identify all private and utility owned property that each Developer would need to obtain for its proposed project. Cost estimates for the property were derived by obtaining recent comparable sales and tax assessments from municipal tax records in the town and county where the property is located and commercially available real estate software. The estimated cost of the required property was included in the independent cost estimates. The tables below provide a summary of the on land real estate costs.

Transmission Line Corridor Real Estate Summary (Excludes Public Roadways)

DEVELOPER	PROPOSAL	Easement				Total Area in Acres	Total Real Estate Cost
		Private		Incumbent Utility			
		No of Parcels	Area in Acres	No of Parcels	Area in Acres		
LS Power	T035	3	0.30	2	0.72	1.02	\$187,232
NextEra	T036 (Core1)	7	1.81	7	0.63	2.44	\$1,323,225
	T037 (Core2)	7	1.83	8	0.63	2.46	\$1,522,725
	T038 (Core3)	9	1.95	11	0.99	2.94	\$1,606,212
	T039 (Core4)	11	5.24	11	0.99	6.23	\$2,227,779
	T040 (Core5)	7	1.90	9	0.85	2.75	\$1,372,235
	T041 (Core6)	8	1.38	11	1.13	2.51	\$1,500,289
	T042 (Core7)	9	2.25	13	1.28	3.53	\$1,514,052
	T043 (Enhance1)	16	2.89	14	5.73	8.62	\$3,425,303
	T044 (Enhance2)	71	100.10	14	5.81	105.91	\$4,141,872
Propel NY	T047 (BS1)	15	0.96	10	0.76	1.72	\$1,566,960
	T048 (BS2)	13	0.78	7	0.34	1.12	\$1,060,013
	T049 (BS3)	15	0.97	12	0.94	1.91	\$1,703,342
	T051 (AS5)	17	1.18	12	1.00	2.18	\$1,798,246
	T052 (AS6)	23	1.59	18	1.28	2.87	\$2,592,883


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DEVELOPER	PROPOSAL	Easement				Total Area in Acres	Total Real Estate Cost
		Private		Incumbent Utility			
		No of Parcels	Area in Acres	No of Parcels	Area in Acres		
	T053 (AS7)	27	1.87	15	1.01	2.72	\$2,575,657

State Own Property - 94 Acres

Substation Real Estate Summary

DEVELOPER	PROPOSAL	Easement				Total Area in Acres	Total Real Estate Cost
		Private		Incumbent Utility			
		No of Parcels	Area in Acres	No of Parcels	Area in Acres		
LS Power	T035	1	1.00	4	44.00	45.00	\$10,942,216
NextEra	T036 (Core1)	3	4.98	7	13.30	18.28	\$44,826,855
	T037 (Core2)	3	4.98	7	13.30	18.28	\$44,826,855
	T038 (Core3)	4	7.58	8	13.30	20.88	\$45,505,135
	T039 (Core4)	4	7.58	8	13.30	20.88	\$45,505,135
	T040 (Core5)	4	7.58	8	13.30	20.88	\$45,505,135
	T041 (Core6)	5	10.48	8	21.30	31.78	\$51,696,287
	T042 (Core7)	5	10.48	9	26.10	36.58	\$51,851,424
	T043 (Enhance1)	5	10.48	11	32.20	42.68	\$56,741,852
	T044 (Enhance2)	5	10.48	10	27.10	37.58	\$51,851,424
Propel NY	T047 (BS1)	1	0.30	8	21.90	22.20	\$37,420,741
	T048 (BS2)	1	0.30	9	18.30	18.60	\$21,066,751
	T049 (BS3)	1	0.30	8	22.80	23.10	\$38,409,490
	T051 (AS5)	2	0.90	9	21.90	22.80	\$37,505,876
	T052 (AS6)	2	5.50	9	21.90	27.40	\$49,633,813
	T053 (AS7)	4	12.10	9	24.10	36.20	\$39,371,620

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4.7. Operational Plan

The review team conducted an evaluation of the Developers' operations and maintenance (O&M) plans detailed in their proposals. The review centered on the Developers' proposals. The following are common elements of the Developers' O&M plans:

- All O&M activities will comply with NERC regulations, and
- Control center schedules will be 24-7-365.

Below is a summary of the review team's review of the proposed O&M plans. The review team did not identify any major flaw with any Developers' O&M plans.

Summary Proposed of O&M Plans			
#	Developer	Operations	Maintenance
T035	LS Power	LS Power's operations staff will perform real-time operations monitoring and control, planned outage coordination, and switching coordination for its project. The project will be operated by LS Power's control centers located in Colonie, New York and Clifton Park, New York.	LS Power will self-perform routine substation maintenance and inspections, minor repairs, and oversee outside contractors. Qualified outside contractors will conduct preventative and predictive maintenance, support forced outage response, perform emergency repair, and complete major facility rebuilds as may be necessary. The HVDC vendor will be used to conduct these activities for the HVDC converter stations. A comprehensive maintenance plan was provided.
	NextEra	The Projects onshore and off-shore system operations will be provided from NextEra's existing transmission control centers located in Albany NY.	

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Summary Proposed of O&M Plans			
#	Developer	Operations	Maintenance
	Propel NY	Facilities would be operated from the Frederick R. Clark Energy Center Control Room, which is owned and operated by NYPA and continuously staffed all hours of every day (24-7-365).	NYPA's Operations and Transmission staff work jointly to operate and monitor the facilities, perform routine inspections, conduct preventive maintenance, and provide emergency response to a corrective maintenance or outage situation.


4.8. Field Reviews

Field review of proposed transmission line routes was limited to routes located in public thoroughfares. The review team used the results to develop the project scheduling and cost estimates and identify potential constructability issues and risks with the proposed design, siting, and routing. The review team was granted access to the incumbent substations and some transmission lines for field review. The concerns noted during this site visit are reflected in the risk register.

4.9. Work Plans

The Developers' work plans should provide a detailed description of the overall work plan from start to finish; should list items to be done by in-house staff; and list services that will be performed by consultants or contractors. No significant deficiencies were found in the work plans and processes proposed by any of the Developers. A high-level summary of the work plans follows:

- All three Developers have a history of managing successful transmission and substation design and construction projects.
- All Developers have a well-defined project management plan to implement the project.
- There was variation in the degree of self-performance of work versus using third-party contractors. All Developers utilize internal staff to manage internal and external resources.
 - LS Power proposes to use internal staff for the majority of the engineering and construction management supplemented by consultants.
 - NextEra proposes to utilize internal resources as subject matter experts and project management personnel to manage external resources.

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- Propel NY will draw from both organizations to establish either internal teams of subject matter experts to complete tasks or procure, through existing MSAs or an open bidding process, the necessary consultants and contractors needed to complete tasks.
- All Developers include work plan activities in their estimates and schedules. More detailed analysis of the construction work plans is discussed in the schedule analysis section of this report.
- All Developers propose permitting and regulatory activities to be performed by a mix of in-house staff and outside consultants.
- All Developers propose to contract transmission line and substation surveying.
- All Developers propose to contract for site work and construction.
- LS Power would share public outreach efforts with public relations firms. All Developers signal the importance of early and careful attention to public outreach.
- It was not possible to evaluate specific team members at this stage, as they are expected to be selected from internal staff and competitively from leading engineering, geo-technical, environmental, and construction firms.


4.10. Environmental

All of the Developers' proposals recognize the need for environmental studies, permits, and approvals from various federal and state government agencies. Standard permit requirements include transmission approval from the NYPSC under Article VII; wetland delineation and protection; archeological studies; storm water pollution prevention requirements; stream protection; invasive species management; agricultural land protection; and rare, threatened and endangered species surveys and protection. The Developers acknowledge the possibility that their proposals could require modification to address additional permit conditions. Based on available information, there do not appear to be any reasonably foreseeable environmental issues that would prevent the projects from being constructed. In general, the underground terrestrial cable installations and substations have minimal environmental risks when compared to the submarine components of each proposal.

The following is a general discussion of the most significant foreseeable environmental issues and factors that could affect each of the proposals.

4.10.1 Submarine Transmission Line Constraints

As component of the proposals, Developers propose submarine transmission lines that are

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HVDC or alternating current (“AC”). Those cables are proposed to be routed through the marine waters surrounding New York. The waterways that these cables could cross vary between proposals and include, but are not limited, to Long Island Sound, Atlantic Ocean, Lower New York Bay, Upper New York Bay, East River, and Hudson River.

4.10.1.1 Existing Infrastructure Crossings - Pipelines, Cables and Transportation Tunnels

The waters surrounding Long Island and New York City contains a large number of existing submarine linear infrastructure, including electric/telecommunication cables, pipelines, and vehicle/railway/subway tunnels. This infrastructure is owned by a combination of private companies and public entities, such as the Metropolitan Transportation Authority (MTA) and Port Authority of New York and New Jersey. The following table summarizes the number of tunnels, cable area, and pipeline crossings involved for each proposal:

Linear infrastructure crossing for all PPTN Projects

Route	Tunnel Crossings	Cable Area Crossings	Pipeline Area Crossings
T035 – LSP Atlantic Gateway	-	1	1
T036 – NextEra Core 1	-	1	-
T037 – NextEra Core 2	-	1	-
T038 – NextEra Core 3	-	2	-
T039 - NextEra Core 4	16	4	3
T040 – NextEra Core 5	-	2	-
T041 NextEra Core 6	-	2	-
T042 - NextEra Core 7	10	33	8
T043 - NextEra Enhanced 1	16	23	8
T044 - NextEra Enhanced 2	16	33	8
T047 – Propel Base Solution 1	-	1	-
T048 – Propel Base Solution 2	-	1	-
T049 – Propel Base Solution 3	-	1	-
T051 – Propel Alternate Solution 5	-	1	-
T052 – Propel Alternate Solution 6	-	1	-
T053 – Propel Alternate Solution 7	-	1	-
Source: BOEM, 2022/MARCO, 2022			
Notes: This table only identifies routes that cross linear infrastructure. Routes that are immediately adjacent to linear infrastructure area not included in this table.			

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4.10.1.2 Navigation Channels and Anchorage Areas


There are several proposed routes that cross or run adjacent to designated and maintained federal navigation channels and anchorage areas. Routing through this area is very complex and will cross multiple navigation features. The following table provides the quantity of crossings for each proposed project route.

Federal Navigation and Anchorage Area Crossing for All Projects.

Route	Navigation Channel Crossings ¹	Anchorage Area Crossings
T035 – LSP Atlantic Gateway	1	1
T036 – NextEra Core 1	-	1
T037 – NextEra Core 2	-	1
T038 – NextEra Core 3	-	1
T039 - NextEra Core 4	2	3
T040 – NextEra Core 5	-	1
T041 NextEra Core 6	-	1
T042 - NextEra Core 7	6	7
T043 - NextEra Enhanced 1	5	8
T044 - NextEra Enhanced 2	6	8
T047 – Propel Base Solution 1	2	3
T048 – Propel Base Solution 2	2	3
T049 – Propel Base Solution 3	2	3
T051 – Propel Alternate Solution 5	2	3
T052 – Propel Alternate Solution 6	2	3
T053 – Propel Alternate Solution 7	2	3
Note: ¹ Some of these cross/ run within channels for extended distances within high traffic areas in New York Harbor. Source: NOAA, 2022		

4.10.1.3 Contaminated Sediment

The Hudson River starting from the Battery at the southern end of Manhattan and extending 200 miles north is considered a federal and New York State Superfund Site as a result of PCB contamination (EPA, 2022). Several projects (T039, T042, T043, T044) propose to route through the Lower Hudson portion of the Superfund Site. See the following table for submarine cable distances within the designated Superfund Site.

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Submarine Route Lengths within Hudson River PCB Superfund Site.

Route	Approximate Length of Hudson River PCB Superfund Site Crossed
T039 - NextEra Core 4	19 miles
T042 - NextEra Core 7	41 miles
T043 - NextEra Enhanced 1	59.5 miles
T044 - NextEra Enhanced 2	60 miles
Notes: Other submarine routes not identified do not cross mapped remediation areas. Source: ArcGIS NYSDEC Remediation Areas	

4.10.1.4 Sensitive Species and Habitats


The marine waters surrounding New York contain sensitive marine species and habitats. Sensitive species can include aquatic species, such as threatened and endangered whales/sturgeon/sea turtles or species, that are regionally significant and are located in New York area waters. In many instances regulatory agencies will impose Time-of-Year Restrictions (TOYR) in the form of special permit conditions to minimize potential impacts to sensitive species or habitat during construction. It is likely that all project routes will be subject to some form of TOYR. TOYR will vary based on the specific location or routing of the project. Several TOYRs that are generally included in state and/or federal permits are identified in the table below.

General Time-of-Year Restrictions (TOYR) for waters surrounding New York

Species	TOYR Window Dates	PPTN Projects Affected
Winter Flounder Spawning ¹	January 1 to May 31	Likely All
Anadromous Fish Migration and Spawning ¹	March 1 to June 30	T039, T042, T043, T044, T047, T048, T049, T051, T052
Finfish/Shellfish Spawning ²	June 1 to September 30	Likely All
Nesting Shorebird ²	April 1 to August 31	T038, T039, T040, T041, T042, T043, T044, T053
Atlantic Sturgeon NY Bight Congregation ³	October 1 to November 31	T042, T043, T044
Source: ¹ (USACE, 2022), ² (NYSDEC, 2022), ³ (FERC, 2019)		

4.10.1.5 Additional Regulatory Concerns – Farragut

The New York City Department of Small Business Services is the agency that issues permits for improvement and maintenance to waterfront structures and NYC-owned

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waterfront buildings. The proposed expansion of the Farragut Substation, as proposed by NextEra in T037, 038, 039, 040, 041, 042, 043, and 044 into the East River appears to be in a mapped V-Zone based on the NYC Preliminary Flood Insurance Rate Maps. Pursuant to G304.2 V-Zone Construction Standards Section 6, (NYC, 2022) Development, including land-disturbing activities, seaward of the reach of mean high tide are prohibited. Therefore, to develop a pier in this area, which appears to be prohibited under the above code, would likely require a variance from the Board of Standards and Appeals.

4.10.1.6 Additional Regulatory Concerns – Adjacent States


A portion of the submarine alignment under T035 is in close proximity to the Connecticut state line near the landing at Port Chester. Additionally, a portion of the submarine route for T039, T042, T043, and T044 is near the New Jersey state line within Upper New York Bay and the Lower Hudson River. Routing of these projects outside of the boundaries of New York State could require additional permitting and authorizations from New Jersey or Connecticut regulatory agencies.

4.10.2 Substation and Transition Stations

4.10.2.1 Visual Impacts

The visual impacts of any proposed substation or transition station will need to be considered during the Article VII permitting process. None of the potential impacts described herein represent fatal flaws for any of the proposals but could result in additional public opposition, especially in areas with high property value or sensitive areas (*e.g.*, parks). This could result in the need for visual screening to minimize impact or could delay project approval. The following are the substations with the most likely visual impacts:

The visual impacts from development of transition stations, likely located at or near Shore Road and Davenport Park (*i.e.*, all NextEra proposals T036-T044), Northport Power Station (T038-T044), and JFK Marina and Park Parking (T039, T043, and T044), would be most visible from the water. At Shore Road, the transition station would be visible from Hempstead Bay, except areas north of Tappen Beach. Buildings directly around the Shore Road location and trees along the shores of Hempstead Bay would likely prevent visibility of the transition station to residential areas; however, the

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transition station would likely be visible from North Hempstead Beach Park and Beach Hill Colony across the bay.

The transition station at Northport Power Station would be visible from areas north, north northwest, and north northeast.

The transition station at Davenport Park would be visible from areas southeast in the Long Island Sound.

The transition station at JFK Marina and Park Parking would have the greatest visibility; however, most of this visibility would be from the Hudson River.


The Northgate and Southgate substations (T035) are roughly 20 acres each. The Northgate substation is mostly surrounded by trees, which would likely provide some visibility protection; however, it would likely be visible from the Taconic Parkway. The Southgate substation is more exposed and would be visible from residential buildings from the south to the southeast.

4.10.2.2 Wetland and Mitigation

Barrett Substation and Longshore Substation in T035 is surrounded by NYSDEC Tidal Wetlands. The NYSDEC would require compensatory mitigation for permanent impacts to wetlands. The cost of which will depend on the proposed impacts but could be on the order of \$250,000/acre with a mitigation ratio that could be as high as 3 to 1. In addition, any compensatory mitigation will require 5 years of monitoring to ensure that there is 85% survival of the plantings. The cost estimates for compensatory mitigation have been included in the independent cost estimates for the applicable projects.

4.10.2.3 Contaminated Sites

Depending on the past use of the site, these developed areas may be more likely to have subsurface soil contamination. Propel proposal T053 proposes an AC/DC converter station adjacent to the existing Northport substation. The proposed converter station is shown where aerial imagery depicts a large above-ground storage tank farm. Subsurface contamination would be very likely here.

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Phase 1 and/or 2 Environmental Site Assessments would be conducted early in the design phase and would be expected to be resolved within the timeframe of the Article VII process. If subsurface contamination is found, it would likely require negotiation with the current owner to determine which entity will be financially responsible and who will address the contamination to allow the converter station to be constructed. This could impact the project schedule.

4.10.3 Terrestrial Transmission Routing

SECo reviewed the routing of the transmission lines of each project to determine the number of miles and percent of the project's total mileage that would be crossing through Environmental Justice (EJ) Areas. Additional consideration may be required for routing through these areas. The table below shows the mileage crossing through the EJ Areas for each project.

Routing through EJ Areas

Proposal	Routing through EJ Areas (miles)	Routing through EJ Areas (% of total mileage)
T035- LS Power	10	15
T036- NextEra Core 1	23	22
T037- NextEra Core 2	30	29
T038- NextEra Core 3	29	21
T039- NextEra Core 4	28	17
T040- NextEra Core 5	22	18
T041- NextEra Core 6	23	17
T042- NextEra Core 7	30	5
T043- NextEra Enhanced 1	39	15
T044- NextEra Enhanced 2	47	14
T047- Propel Base 1	17	22
T048- Propel Base 2	22	26
T049- Propel Base 3	18	20
T051- Propel Alt 5	20	19
T052- Propel Alt 6	47	30
T053- Propel Alt 7	31	17

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4.11. Replacement of Infrastructure

The review team identified where the Developers have proposed to replace aging infrastructure. The review team does not believe that there is a significant advantage to any of the proposals related to replacement of aging infrastructure.

4.11.1. Replacement of Infrastructure – Transmission Lines


The following table is a summary of the overhead transmission line mileages to be replaced for each proposal.

LS Power T035	NextEra T036-T044	Propel T047-T053
None	T044 (Enhance 2) Transmission Line component 225, Buchanan to Ramapo 7.4 miles existing 138kV line rebuilt /upgrade to 345kV with proposed 2 bluebird ACSS conductor per phase	None

4.11.2. Replacement of Infrastructure – Substations

The proposals submitted by the three Developers do not have significant plans for replacement of existing substation infrastructure. The most significant impact would be LS Power's proposal to rebuild the Barrett 138 kV substation, which has been identified as a potential NUF and will be identified in the System Impact Study ("SIS"). The review team does not believe that the replacement of aging infrastructure distinguishes the proposals from each other. Below is a comparison listing of the substations where equipment is being proposed for replacement or could be replaced due to NUFs required for the reliable interconnection of the project.

Substation	LS Power T035	NextEra T036-T044	Propel T047-T053
Barrett	SIS to identify the NUF at the station	No replacement of existing equipment	No replacement of existing equipment
Elwood	No replacement of existing equipment	Replace (1) 138kV 80MVAR reactor	No replacement of existing equipment
Holbrook	No replacement of existing equipment	No replacement of existing equipment	Replace existing 138kV switch 1322 with a new PASS CB
Newbridge	No replacement of existing equipment	Retire 138kV breakers 1410, 1420 & 1480	Replace existing 138kV breaker with (2) new PASS CB's

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Substation	LS Power T035	NextEra T036-T044	Propel T047-T053
Rainey	No replacement of existing equipment	No replacement of existing equipment	T047, T049, T051 & T052 – Replace (2) existing 345kV CB's 1E & 6E with (4) PASS CB's T048 & T053 – Replace (1) existing 345kV CB 1E with (2) PASS CB's
Shore Rd	No replacement of existing equipment	No replacement of existing equipment	Replace existing 138kV CB 1380 with new 138kV CB


4.12. Design Verifications - Substations

The review team compared the proposed bus arrangement for the substations that were submitted with the Developers' proposals. A substation design assessment table considered the type of bus arrangements proposed, number of lines, number of transformers, breakers, PARs, and reactors for each substation. This assessment also notes any design concerns and operational or constructability issues that were found during this review. Below is a summary to highlight the more significant findings from the substation assessment that was completed for each Developer.

4.12.1. Barrett Substation

All three Developers are building a new substation at Barrett, but each made different assumptions regarding what will be constructed for the interconnection of the Empire Wind II project and interconnection of their proposed facilities to the system.


- LS Power:
LS Power assumed that the existing Barrett substation will be rebuilt into a 6-bay breaker-and-a-half ("BAAH") configuration. This new substation will provide three 138 kV terminal positions to connect to LS Power's proposed Longshore substation. Longshore substation will include three 345/138 kV transformers. Barrett substation rebuild has been identified as a potential NUF by the Developer. Hence, the actual design and non-binding estimate of cost for NUFs to interconnect the lines from the proposed Longshore station will be identified in the SIS.

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- NextEra:
NextEra plans on building a new Barrett substation consisting of a 4-bay 138 kV BAAH GIS. The two existing 138 kV Barrett – Valley Stream lines will be broken into and looped into the proposed Barrett GIS.
- Propel NY:
Propel NY assumes that a new 5-bay 138 kV BAAH substation will be built to facilitate the interconnection of the Empire Wind II project and the two existing Barrett – Valley Stream 138 kV lines will be broken into and looped into that 5-bay BAAH substation. Under that assumption, Propel NY's projects include installing a new Barrett substation consisting of two or three 345/138 kV transformers and tying into the 345 kV system at either East Garden City, Tremont, or a new Eastern Queens substation, as outlined in the individual proposals. During the site visit, the review team observed that there is insufficient space to replace the existing breaker 1330 with a double PASS breaker (T048) since there is a large lattice dead end structure that would interfere with this installation.

4.12.2. Buchanan Substation:

- LS Power:
The existing Buchanan substation was not impacted by the LS Power proposal.
- NextEra:
The existing Buchanan substation was not impacted by NextEra's proposals T036-T041. However, proposals T042-T044 include a new HVDC converter station that is being added to the northeast of the existing substation in the area of the existing transmission lines. Proposal T042 also shows a proposed 345 kV BAAH GIS being built between the HVDC station and existing Buchanan station. Proposal T044 shows a proposed 345kV BAAH GIS being built along with the addition of two 345 kV PARs north of the proposed GIS building. Based on the current proposed size of the PARs, these cannot be manufactured and the PARs will need to be either two three-phase units or three single-phase units. There is also a concern that there are no by-pass switches shown for the PARs and none of these proposed designs address how the transmission lines would be relocated.
- Propel NY:
The existing Buchanan substation was not impacted by the Propel NY proposals.


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4.12.3. Dunwoodie Substation

- LS Power:
The existing Dunwoodie substation was not impacted by the LS Power proposal.
- NextEra:
NextEra's proposals T036-T044 propose a 345 kV BAAH GIS added north of the substation in the adjacent 345 kV transmission ROW. The one-line diagram provided shows how NextEra would be tying into the existing substation. However, the proposal does not illustrate how the transmission lines would be modified to tie into the proposed GIS building. Also, the proposed GIS is located under three 345 kV existing transmission lines causing clearance issues. The site visit confirmed that the approximate clearance from grade to the 345 kV overhead lines in the ROW is about 40 feet so there is not adequate clearance for constructing the proposed GIS facilities while the transmission lines are in service. Therefore, the construction of the GIS would require long-term outages. This may also require long simultaneous outages of both lines to Pleasantville. Based on this information, the review team determined that NextEra's proposals at Dunwoodie could have significant constructability issues.
- Propel NY:
Propel NY proposes the addition of a 345 kV GIS breaker with proposals T052 & T053. The site visit revealed that the proposed Plot Plan shows the GIS addition for the line terminal between breakers 3 and 4 instead of between breakers 6 and 8 as shown on the one-line diagram. The review team determined that there is insufficient space to install a breaker and line terminal between breakers 6 and 8 without major modifications to the existing facilities. However, extending the GIS bus and adding a breaker between breakers 3 and 4 could be accomplished; however, existing oil and SF6 gas equipment would need to be relocated.

4.12.4. East Garden City Substation

- LS Power:
The existing East Garden City substation was not impacted by the LS Power proposal.

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- NextEra:

NextEra's proposals T036-T044 propose a 345 kV BAAH GIS north of the existing East Garden City ("EGC") substation, where an existing office building currently resides. Based on the provided site plans, it appears that the proposed substation may infringe on access to the rear of the adjacent office buildings that may require purchasing that property or entering into other arrangements. The drawings provided also show a PAR being installed that, based on the feedback from a manufacturer, a PAR of the proposed size cannot be manufactured. As a result, the PAR would need to be either two three-phase units or three single-phase units. To accommodate the additional equipment, more space would be required at this location for the installation of the PARs. Also, for proposals T036, T038, T043 and T044, where two PARs of this size are shown, the review team determined that there is a significant concern that the site will no longer be large enough for the additional equipment arrangement and, therefore, require the acquisition of the adjacent properties.

The proposed route for the underground cables that tie the existing 345 kV PARs to the proposed GIS is along the west side of the substation heading north. During the site visit, the review team observed that there is a double circuit overhead 138kV (Lines 361 and 362), an overhead distribution circuit, and communication circuit along the west side of the substation. There is also a large double circuit lattice structure for the Lines 361 and 362 located in the northwest corner of the substation adjacent to a building. Due to these interferences, the review team determined that it will be very difficult to install the 345 kV cables through this area. The proposed route for the underground cables to tie the existing 345 kV transformers to the proposed GIS and the 138kV cable to the proposed PAR are exiting towards the east and then turning north. It will be difficult to exit the substation to the east since the cables will need to cross three gas lines (30", 20", 8"), one 138 kV pipe-type cable (Line 463), and 8" water lines that run North-South along the east side of the station.

Propel NY:

Propel proposals T047-T049 and T051-T053 show a proposed 345kV BAAH AIS located on vacant property adjacent to the existing EGC site. This property was recently purchased by LILCO.

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During the site visit it was noted that all of 138 kV transmission lines (462, 463, 465, 262) that are to be intercepted and tied into the proposed substation are oil-filled, pipe type cables. Tying into these types of cables requires managing the oil pressure and transitioning to EPR, which adds an additional level of complexity to the construction. The extent of work required will be dependent on the cable's condition and age. In addition, the location of the proposed 345kV reactor will interfere with a main cable trench and access road. The provided plot plan incorrectly shows the location of the existing Y49 line exit. Therefore, the proposed 345 kV reactor (T048, T053) will extend further to the west than shown. As a result, it may not fit within the fenced area of the substation. this reactor would also be installed under the double circuit overhead (Lines 361 and 362), distribution, and communication circuits.

4.12.5. Farragut Substation

- LS Power:
The existing Farragut substation was not impacted by the LS Power proposal.
- NextEra:
The existing Farragut substation is not impacted by proposals T036 and T040-T042. However, all other NextEra proposals show a proposed 345 kV BAAH GIS being built on a platform that is situated over the East River. The review team concluded that the proposed design presents a major concern that trying to build on this site, extending into the East River, could present significant constructability and permitting challenges.
- Propel NY:
The existing Farragut substation was not impacted by the Propel NY proposals.


4.12.6. Jamaica Substation:

- LS Power:
The existing Jamaica substation was not impacted by the LS Power proposal.
- NextEra:
NextEra's proposals T036-T044 show a proposed 138 kV circuit breaker and associated GIB being installed on the roof of an existing building with other electrical equipment. Though there is existing equipment currently installed on the

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roof of this building, the review team is concerned that the existing building/roof may not be able to support this additional equipment and costly reinforcement will be required. The design also violates Con Edison's design principles 2, 3 and 5. Specifically, the site visit revealed that breakers 6 and 8 are located across from each other and share the same cross bus to tie to the main bus. Therefore, there is not adequate space to add an additional breaker and line terminal at this location as shown on the proposed plot plan. Further, the proposed modifications to the plot plan do not show the equipment being tied to the correct electrical location. The proposed plan shows the transmission is to be routed down the side of the building. However, there is an access door to the building, a concrete block building for the station's deluge system, and other conduits and equipment mounted on the outside wall that will interfere with the installation of the transmission cable. The most likely means for mitigation would be to build a facility on an adjacent property.

- Propel NY:
Propel NY's proposals T048 and T053 require forced cooling to be added to the lines to increase their capability. However, the required cooling equipment is not shown on the substation plans, and there may not be adequate space at Jamaica station to add the required equipment.


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4.12.7. Millwood Substation:

- LS Power:**
 LS Power's proposal at Millwood is to build a 345 kV GIS and HVDC station, called Northgate substation, adjacent to the existing Millwood substation. Based on views from Google Earth imagery, there appears to be solid rock to the north of the existing Millwood substation where the proposed station is to be built. Costs for rock removal and driveway have been included in the independent estimate to address constructability issues. The site visit determined that access within the ROW will be a major issue as an existing 345 kV line crosses the existing access road and the two lines are very low. Moreover, there are concrete blocks blocking the ROW with no access for vehicles. Both of the two Millwood — Buchanan and Millwood — Pleasant Valley lines exit the Millwood substation on double circuit poles. In order to tie these into the proposed Northgate GIS, extended outages of the doublecircuit lines would be required.
- NextEra:**
 The existing Millwood substation was not impacted by the NextEra proposals.
- Propel NY:**
 The existing Millwood substation was not impacted by the Propel NY proposals.

4.12.8. Newbridge Road Substation:


- LS Power:**
 The existing Newbridge substation was not impacted by the LS Power proposal.
- NextEra:**
 NextEra's proposals T036-T044 show an existing 138 kV bay being removed and a 345 kV BAAH GIS being built in the northwest corner within the existing fenced area. The review team noted that this work would require long-term outages of the 345/138 kV transformers and distribution transformer. The site visit revealed that this bay area is elevated approximately 10' above the rest of the station. The proposed GIS building extends beyond this elevated area requiring additional grading and a retaining wall. Also, the GIS building will interfere with an existing oil pump building and an underground oil tank.

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- Propel NY:
Propel NY proposals T047, T049, T051, and T052 show the replacement of existing circuit breaker 1460 with two PASS circuit breakers, which is intended to provide for a stuck breaker contingency for Lines 465 and 461. During the site visit, the review team determined that there are two underground cables (Lines 463 and 465) crossing this area that may interfere with the breaker's foundation.

4.12.9. Northport Substation:


- LS Power:
The existing Northport substation was not impacted by the LS Power proposal.
- NextEra:
Northport substation is not impacted by proposals T036 and T037. However, all of NextEra's other proposals propose to retire an existing 138 kV circuit breaker for Line 672 and to construct a 138 kV BAAH GIS on utility property southeast of the existing yard. Also, for proposals T038-T040, NextEra proposes to install two 345/138 kV transformers and a reactor to the northwest of the existing substation. Instead of the two 345/138 kV transformers, proposals T041-T044 propose a HVDC station. A concern with the HVDC installation is that there is no design showing how the three 138 kV lines from the GIS will be tied together to connect to the HVDC system. The independent estimate includes allowance for a new ring bus. The underground cables running the length of the existing substation from the proposed transformers to the proposed GIS will be crossing several 12'-16' deep tunnels that run from the plant to the discharge area across the substation. Some tunnels are located only 5'-6' below grade. These may cause interference with installing the proposed cables.

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- Propel NY:
Propel proposals T047-T049 and T052 do not impact the existing Northport substation. However, proposal T051 proposes to relocate the existing 138 kV circuit breaker 1460 and install a 138 kV PAR and two PASS breakers at the south end of the existing substation extending into the existing parking lot. Project T053 proposes a 345-138kV BAAH GIS on utility property south of the existing substation and a HVDC station on utility property which is southwest of the existing substation. The site visit revealed that the site proposed for the HVDC is an active oil tank farm used as a back-up source for the power plant. Therefore, the review team has concluded that this site is not available. It will be difficult to install the new 138 kV underground cables running to the proposed PAR since it will cross several 12'-16' deep tunnels that run from the plant to the discharge area. Some tunnels are only 5'-6' below grade. Also, the underground termination would be installed next to breaker 1450, which is the location of one of the tunnels.

4.12.10. Rainey Substation:


- LS Power:
The existing Rainey substation was not impacted by the LS Power proposal.
- NextEra:
NextEra's proposals T036-T044 propose a 345 kV BAAH GIS adjacent to the existing Rainey substation. Based on the NextEra's one-line diagrams, the intertie locations going back to the existing Rainey substation would resolve the stuck break contingency for breaker 1E. The site visit revealed that there is insufficient space to install line terminations between breakers 1E and 2E or between breakers 1W and 2W. There are also several interferences for routing the underground cable through the yard to the proposed GIS, such as three tunnels running between Rainey and Ravenswood Plant, oil containment, and cable trenches. Con Edison is also in the process of installing a transformer, PAR, and line terminal—all of which would interfere with the proposed cables from the Rainey yard to the GIS.
- Propel NY:
Propel NY proposals T047, T049, T051, and T052 show the replacement of existing circuit breakers 1E and 6E with four new PASS circuit breakers, which resolves the stuck breaker contingency for both breakers. Proposals T048 and T053 show the

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replacement of only circuit breaker 1E with two new PASS circuit breakers, which would resolve the stuck breaker contingency for this breaker alone.

4.12.11. Ruland Road Substation:

- LS Power:**
 LS Power's proposal is to build a 345 kV GIS and HVDC station, called Southgate, adjacent to the existing Ruland Rd substation. Their proposal also includes a 138 kV two-bay BAAH AIS to the west side of the 138 kV existing substation on existing utility property. The site visit revealed that the two proposed 138 kV bay additions will interfere with an overhead 138 kV strain bus to banks #2 and #4, an overhead 69kV line running from the 69 kV yard to air core reactors located in the 138 kV yard, and an underground 138 kV cable (Line 567). Also, the plot plan shows the underground connection between the proposed Southgate to Ruland Rd terminating in the incorrect line terminal position.
- NextEra:**
 NextEra's proposals T036 and T039-T042 propose a 138 kV BAAH GIS being built on adjacent property to the northeast of the existing substation. The projects also propose an AIS bus arrangement with two 345/138 kV transformers and a 345 kV shunt reactor east of the GIS. Proposals T037, T038, T043, and T044 show these same facilities and a similar configuration with the addition of a 345 kV PAR. None of these proposed designs, however, address how the transmission lines are being transitioned to the 138 kV GIS switchgear. Based on feedback from a manufacturer, the proposed size of the PAR cannot be manufactured. Accordingly, the PARs would need to be either two three-phase units or three single-phase units. The site visit revealed that there is insufficient space to add a breaker and line terminal position between breaker 1420 and the main bus. Major modifications to the existing infrastructure would be required to accommodate this installation.

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- Propel NY:

Propel NY proposals T047-T049 and T051-T053 propose a 345-138 kV ring bus AIS on adjacent property to the northeast of the existing substation. All substation arrangements for the projects are similar except for the number of circuit breakers and PARs. The proposed layouts do not affect the existing 69 kV and 138 kV transmission lines.

4.12.12. Shore Road Substation

- LS Power:

The existing Shore Rd substation was not impacted by the LS Power proposal.

- NextEra:

NextEra proposals T036-T044 propose to install a 138 kV 250MVAR reactor and circuit breaker to the existing bus arrangement between existing circuit breakers 1350 and 1360. There is space available in the 138 kV yard for the equipment.

- Propel NY:

Propel proposals T047, T049, T051, and T052 propose a 345 kV and 138 kV ring bus GIS on an adjacent property to the west of the existing Shore Road substation. The projects' arrangements are similar except for the number of circuit breakers and reactors. Proposals T048 and T053 propose a transition station on the same parcel of land as all of the other Propel proposals. All proposals also propose replacement of the 138 kV circuit breaker 1380 and a tie position to the proposed 345 kV GIS.


4.12.13. Sprain Brook Substation

- LS Power:

The existing Sprain Brook substation was not impacted by the LS Power proposal.

- NextEra:

NextEra proposals T036-T044 propose an AIS bay at the eastern and western sides of existing Sprain Brook substation. The proposed addition to the western side of the station is within the existing fenced area in an open bay position. However, the addition to the eastern side would require an expansion of the substation in that direction, as well as purchasing of additional property. This proposal presents a major concern because the slope of the terrain in this area drops off significantly from approximately 60 feet at the southern end of the substation to approximately


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90 feet at the northern end of the proposed work area. It has been estimated that a retaining wall system would need to be installed of approximately 1,400 feet long and approximately 60 feet at the south end, while increasing in height heading north to approximately 90 feet tall where NextEra shows the reactor installation. It is also unknown whether a retaining wall of this size could be constructed at this location since it would be within close proximity to a residential neighborhood and access is limited. The installation of a retaining wall requires removal of existing vegetation, is expected to cause significant visual impact and permitting concerns. The site visit revealed that there are rock outcroppings and a significant drop in elevation along the eastern and western side of the substation, which will make it difficult to route an underground line as proposed.

- Propel NY:
Propel NY proposals T047-T049 and T051-T053 show an AIS bay addition at the western side of the existing Sprain Brook substation within the fenced area in an open bay position. They also show the addition of a 345 kV reactor with associated breaker and switches to the north of the existing substation on existing utility property. Proposal T053 also proposes HVDC facilities on property adjacent to the substation. The site visit revealed that there are rock outcroppings and a significant drop in elevation along the eastern and western side of the substation which will make it difficult to route an underground line as proposed. It is anticipated that approximately 90% of the site for the HVDC facilities could encounter rock during excavation and the site might require extensive slope protection. This could have high cost and schedule impact depending on volume of rock excavation and methods used (i.e., blasting likely not allowed in this area)

4.12.14. Tremont Substation


- LS Power:
The existing Tremont substation is not impacted by the LS Power proposal.
- NextEra:
The existing Tremont substation is not impacted by the NextEra proposals.
- Propel NY:
Propel proposals T047-T049 and T051-T053 identified, as potential NUF, a 6-breaker ring bus GIS at the southeastern side of the existing Tremont substation as well as

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the installation of a new control house within the fenced area. While the actual design of the interconnection at the Tremont substation is subject to the Transmission Interconnection Procedures, the review team observed, during the site visit, that the proposed GIS equipment is to be installed at the location of the existing bus connections between Bank 1 and 2 and the tie to the 345 kV X28 line to Sprain Brook. Although drawings are not available to confirm the way the cable termination is installed, it appears the X28 cable runs north under the 345 kV bus work. Therefore, it would cause an interference with the installation of the proposed GIS foundations. Also, the proposed location for the equipment and the new control house would cut off Con Edison's access on the east and north side of the substation. Possible mitigation for these issues would be the yard could be expanded towards the east with the GIS installed in the existing parking lot and access to the substation on the north side of the substation. However, there is a change in elevation and a retaining wall that would need to be addressed through the design of the NUF in the Transmission Interconnection Procedures.

4.12.15. Valley Stream Substation

- LS Power:
The existing Valley Stream substation was not impacted by the LS Power proposal.
- NextEra:
NextEra proposals T036-T044 propose a 345 kV BAAH GIS along with three 345 kV reactors being built at a location across the street and southwest of the existing 138 kV substation. The projects also show three 345/138 kV transformers being installed on commercial property south of the existing substation as well. The site visit revealed that there is insufficient space to add a breaker and line terminal position between breakers 1430 and 1450 as proposed. Major modifications to the existing infrastructure would be required to accommodate this installation. Also, an existing oil pump building would need to be relocated.
- Propel NY:
Valley Stream substation is not impacted by the Propel NY proposals except for transmission work associated with relay upgrades and possible retirement of circuit portions for 901 circuit (T053).


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4.13. Design Verifications – Transmission Lines

Based on a review of the technical materials provided by the Developers, several observations and conclusions can be made regarding the proposed transmission lines. The following summarizes a high-level look at the important aspects of proposed designs.


4.13.1. Proposed T-Line Cable Designs

The following tables show the transmission line cable designs proposed by each Developer. Please note that the names of the substation facilities in the table do not indicate the characterization of the facility listed in the “Characterization of Project Facilities” document posted by NYISO on June 1, 2022.


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Transmission Line and Cable Information for Proposed Projects


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				(Miles)	(Miles)	(KV)	#	TYPE	NO/ PH
LS Power	T035	Longshore - Southgate	Underground	21.0	21.0	345	3	4000kcmil XLPE	1
		Southgate - Northgate HVDC	Underground	29.0	45.0	400	3	5000kcmil XLPE	1
			Submarine	16.0				5000kcmil DC	2/Ckt
NextEra	T036 (Core1)	New East Garden City - Sprain Brook	Underground	19.0	27.7	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - Dunwoodie	Underground	18.7	27.4	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
		New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
	T037 (Core2)	New East Garden City - Sprain Brook	Underground	19.0	27.7	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - Dunwoodie	Underground	18.7	27.4	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
		New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
		New East Garden City - New Farragut	Underground	21.7	21.7	345	1	5000kcmil XLPE	1
	T038 (Core3)	New East Garden City - Sprain Brook	Underground	19.0	27.7	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - New	Underground	8.2	33.6	345	1	5000kcmil XLPE	1
			Submarine	25.4		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
		New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
		New East Garden City - New Farragut	Underground	21.7	21.7	345	1	5000kcmil XLPE	1
		New Northport - Pilgrim	Underground	8.4	8.4	138	1	5000kcmil XLPE	1

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				(Miles)	(Miles)	(KV)	#	TYPE	NO/PH
NextEra	T039 (Core4)	New East Garden City - Sprain Brook	Underground	19.0	27.7	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Dunwoodie	Underground	8.2	33.6	345	1	5000kcmil XLPE	1
			Submarine	25.4		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Farragut - Sprain Brook	Underground	3.2	24.9	345	1	5000kcmil XLPE	1
			Submarine	21.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
	T040 (Core5)	New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
		New Northport - Pilgrim	Underground	8.4	8.4	138	1	5000kcmil XLPE	1
		New East Garden City - Sprain Brook	Underground	19.0	27.7	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Northport- New Dunwoodie	Underground	8.2	33.6	345	1	5000kcmil XLPE	1
			Submarine	25.4		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
	T041 (Core6)	New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
		New East Garden City - Dunwoodie	Underground	18.7	27.4	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
		New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
		New Northport - Pilgrim	Underground	8.4	8.4	138	1	5000kcmil XLPE	1
		New Northport HVDC - New Sprain Brook HVDC	Underground	8.5	33.9	320	1	1200 MW Symmetrical	1
			Submarine	25.4					

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				(Miles)	(Miles)	(KV)	#	TYPE	NO/PH
NextEra	T042 (Core7)	New East Garden City - Dunwoodie	Underground	18.7	27.4	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
		New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
		New Northport - Pilgrim	Underground	8.4	8.4	138	1	5000kcmil XLPE	1
		New Northport HVDC - New Sprain Brook HVDC	Underground	8.5	33.9	320	1	1200 MW Symmetrical	1
			Submarine	25.4		320	1	1200 MW Symmetrical	1
		Hudson South (OSW Platform #1 and #2) - Buchanan HVDC	Underground	1.5	122.5	320	2	1200 MW Symmetrical	1
			Submarine	121.0		320	2	1200 MW Symmetrical	1
	T043 (Enhance1)	New East Garden City - Sprain Brook	Underground	19.0	27.7	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - Dunwoodie	Underground	18.7	27.4	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Farragut - Sprain Brook	Underground	3.2	24.9	345	1	5000kcmil XLPE	1
			Submarine	21.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
		New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
		New Farragut - New East Garden City	Underground	21.7	21.7	345	1	5000kcmil XLPE	1
		New Northport - Pilgrim	Underground	8.4	8.4	138	1	5000kcmil XLPE	1
		New Holbrook - Pilgrim	Underground	11.7	11.7	138	1	5000kcmil XLPE	1
		New Northport HVDC - New Sprain Brook HVDC	Underground	8.5	33.9	320	1	1200 MW Symmetrical Monopole	1
			Submarine	25.4		320	1	1200 MW Symmetrical Monopole	1
		New Barrett HVDC - New Buchanan HVDC	Underground	4.6	78.2	320	1	1200 MW Symmetrical Monopole	1
			Submarine	73.6		320	1	1200 MW Symmetrical Monopole	1

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				(Miles)	(Miles)	(KV)	#	TYPE	NO/PH
NextEra	T044 (Enhance2)	New East Garden City - Sprain Brook	Underground	19.0	27.7	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New East Garden City - Dunwoodie	Underground	18.7	27.4	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Ruland Rd - Sprain Brook	Underground	24.4	33.1	345	1	5000kcmil XLPE	1
			Submarine	8.7		345	1	1600mm ² XLPE	2
		New Farragut - Sprain Brook	Underground	3.2	24.9	345	1	5000kcmil XLPE	1
			Submarine	21.7		345	1	1600mm ² XLPE	2
		New East Garden City - New Valley Stream	Underground	7.1	7.1	345	3	5000kcmil XLPE	1
		New East Garden City - New Bridge Rd	Underground	3.8	3.8	345	2	5000kcmil XLPE	1
		New East Garden City - Jamaica	Underground	11.6	11.6	138	1	5000kcmil XLPE	1
		New Farragut - New East Garden City	Underground	21.7	21.7	345	1	5000kcmil XLPE	1
		New Northport - Pilgrim	Underground	8.4	8.4	138	1	5000kcmil XLPE	1
		New Holbrook - Pilgrim	Underground	11.7	11.7	138	1	5000kcmil XLPE	1
		New Jamaica - Corona	Underground	5.9	5.9	138	1	5000kcmil XLPE	1
		New Northport HVDC - New Sprain Brook HVDC	Underground	8.5	33.9	320	1	1200 MW Symmetrical Monopole	1
			Submarine	25.4					
		Hudson South (OSW Platform #1 and #2) - Buchanan HVDC	Underground	1.5	122.5	320	2	1200 MW Symmetrical Monopole	1
			Submarine	121.0					
Propel NY	T047 (BS1)	Barrett to East Garden City	Underground	8.8	8.8	345	1	4000kcmil XLPE	1
		East Garden City to Tremont	Underground	23.5	23.5	345	1	4000kcmil XLPE	1
		Ruland Road to East Garden City (Upgrade)	Underground	0.6	0.6	345	1	4000kcmil XLPE	1
		East Garden City to Shore Road	Underground	10.3	10.3	345	1	4000kcmil XLPE	1
		Ruland Road to Shore Road	Underground	17.8	17.8	345	1	4000kcmil XLPE	1
		Shore Rd - New Rochelle -Sprain Brook	Submarine	10.2	18.3	345	1	1400mm ² XLPE	2
			Underground	8.1				4000kcmil XLPE	1
		Barett to Tremont	Underground	25.7	25.7	345	1	4000kcmil XLPE	1
	T048 (BS2)	Syosset to Shore Road	Underground	11.3	11.3	138	1	4000kcmil XLPE	1
		Ruland Road to Shore Road	Underground	17.8	17.8	345	1	4000kcmil XLPE	1
		Shore Rd - New Rochelle -Sprain Brook	Submarine	10.2	18.3	345	1	1400mm ² XLPE	2
			Underground	8.1				4000kcmil XLPE	1
		Lake Success - Jamaica (uprate	Underground	11.0	11.0	138	1	4000kcmil XLPE	1

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PROPOSAL		LINE DESCRIPTION (SUBSTATION TO SUBSTATION)		Line Length	Total Line Length	VOLTAGE	NO. OF CKT	CONDUCTOR	
				(Miles)	(Miles)	(KV)	#	TYPE	NO/ PH
Propel NY	T049 (BS3)	Barrett to East Garden City	Underground	8.8	8.8	345	2	4000kcmil XLPE	1
		East Garden City to Tremont	Underground	23.5	23.5	345	1	4000kcmil XLPE	1
		Ruland Road to East Garden City (Upgrade)	Underground	0.6	0.6	345	1	4000kcmil XLPE	1
		East Garden City to Shore Road	Underground	10.3	10.3	345	1	4000kcmil XLPE	1
		East Garden City to Shore Road	Underground	10.3	10.3	138	1	4000kcmil XLPE	1
		Ruland Road to Shore Road	Underground	17.8	17.8	345	1	4000kcmil XLPE	1
		Shore Rd - New Rochelle -Sprain Brook	Submarine	10.2	18.3	345	1	1400mm2 XLPE	2
			Underground	8.1				4000kcmil XLPE	1
	T051 (AS5)	Barrett to East Garden City (SCT)	Underground	8.8	8.8	345	1	4000kcmil XLPE	1
		East Garden City to Tremont	Underground	23.3	23.3	345	1	4000kcmil XLPE	1
		Ruland Road to East Garden City (Upgrade)	Underground	0.6	0.6	345	1	4000kcmil XLPE	1
		East Garden City to Shore Road (SCT)	Underground	10.3	10.3	345	1	4000kcmil XLPE	1
		Ruland Road to Shore Road	Underground	17.8	17.8	345	1	4000kcmil XLPE	1
		Shore Rd - New Rochelle -Sprain Brook	Submarine	10.2	18.3	345	2	1400mm2 XLPE	2
			Underground	8.1				4000kcmil XLPE	1
		Syosset to Shore Road (SCT)	Underground	11.3	11.3	138	1	4000kcmil XLPE	1
		Syosset to Greenlawn and	Underground	2.6	2.6	138	1	4000kcmil XLPE	1
	T052 (AS6)	Barrett to East Garden City (345)	Underground	8.8	8.8	345	1	4000kcmil XLPE	1
		East Garden City to Tremont (345 SCT)	Underground	23.5	23.5	345	1	4000kcmil XLPE	1
		East Garden City to Shore Road (345 SCT)	Underground	10.3	10.3	345	1	4000kcmil XLPE	1
		Ruland Road to Shore Road (345)	Underground	17.8	17.8	345	1	4000kcmil XLPE	1
		Shore Rd - New Rochelle -Sprain Brook	Submarine	10.2	18.3	345	1	1400mm2 XLPE	2
			Underground	8.1				4000kcmil XLPE	1
		Syosset to Shore Road (138 SCT)	Underground	11.3	11.3	138	1	4000kcmil XLPE	1
		Syosset to Greenlawn and	Underground	2.6	2.6	138	1	4000kcmil XLPE	1
		Eastern Queens - East Garden	Underground	11.7	11.7	345	2	4000kcmil XLPE	1
		Eastern Queens - Dunwoodie	Underground	21.0	21.0	345	1	4000kcmil XLPE	1
		901 Intercept to Eastern Queens	Underground	0.5	0.5	138	1	4000kcmil XLPE	1
		903 Intercept to Eastern Queens	Underground	2.0	2.0	138	1	4000kcmil XLPE	1
		901-Eastern Queens to Valley	Underground	6.0	6.0	138	1	4000kcmil XLPE	1
		Lake Success - Jamaica (uprate)	Underground	11.0	11.0	138	1	4000kcmil XLPE	1
	T053 (AS7)	Ruland Road to East Garden City (Upgrade)	Underground	0.6	0.6	345	1	4000kcmil XLPE	1
		Barett to Tremont (345 SCT)	Underground	25.7	25.7	345	1	4000kcmil XLPE	1
		Syosset to Shore Road (138 SCT)	Underground	11.3	11.3	138	1	4000kcmil XLPE	1
		Ruland Road to Shore Road (345)	Underground	17.8	17.8	345	1	4000kcmil XLPE	1
		Shore Rd - New Rochelle -Sprain Brook	Submarine	10.2	18.3	345	1	1400mm2 XLPE	2
			Underground	8.1				4000kcmil XLPE	1
		Barrett to Eastern Queens (345)	Underground	11.0	11.0	345	2	4000kcmil XLPE	1
		Eastern Queens (Brinkerhoff) to	Underground	21.0	21.0	345	1	4000kcmil XLPE	1
		Northport - New Rochelle - Sprain Brook HVDC	Submarine	26.0	34.1	320	1	5900kcmil XLPE	1
			Underground	8.1				5900kcmil XLPE	1
		901 Intercept to Eastern Queens	Underground	0.5	0.5	138	1	4000kcmil XLPE	1
		903 Intercept to Eastern Queens	Underground	2.0	2.0	138	1	4000kcmil XLPE	1
		901-Eastern Queens to Valley	Underground	6.0	6.0	138	1	4000kcmil XLPE	1
		Lake Success - Jamaica (uprate)	Underground	11.0	11.0	138	1	4000kcmil XLPE	1

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4.13.2. Proposed Corridors


All the transmission line proposals primarily utilize existing public roadways for underground terrestrial cables and cross waterways utilizing submarine cables. There are few locations where the transmission lines pass through private and incumbent utility real property. The summary of the real estate details the number of private and incumbent utility parcels, total acres, and estimated cost are shown in Section 4.6.2 above. Construction concerns for each of the proposals are identified in the field reports.

The review identified a significant concern regarding the transitions from land cables to submarine cables, especially where multiple cables are used per phase.

LS Power: LS Power has described using two-conductor per circuit submarine cable (5000 kcmil DC) with the same number of cables per circuit used on land sections (5000 kcmil DC). Where the submarine cable transitions to land cable, matching the number of cables permits that the cables can be transitioned between submarine and land utilizing direct-buried joint bays without having above-ground transition substations.

NextEra: There are some significant impacts from the Developer's plan to use two three-core submarine cables (1600 mm²) resulting in two conductors per phase connecting to a single land cable (5000 kcmil) per phase in the areas where the cables transition from submarine to land in New Rochelle (Davenport Park) and Long Island (Tappen beach). Based on our assessment, above-ground transition stations will be required at both transition zones, requiring sizeable permanent above-ground substations that are expected to impact the park on the west and beach area on the east. This increases the risks associated with the conceptual viability of NextEra's design.

Propel NY: The Propel NY proposals indicate submarine cables will transition to land cables using direct-buried joint bays. This requires that there are the same number of conductors on land as there are in the submarine for some distance and then utilize above-ground substations to transition from two cables per phase to a single cable per phase. The description suggests there are two conductors (1400mm²) / phase for the submarine and one conductor (4000kcmil or 5000kcmil) / phase on land. This appears to be done in consideration for visual impact.

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4.13.3. Cable Technologies

All the cable types and applications offered by the Developers have technical viability from the standpoint of available cable technology based on the assumptions stated by the respective Developers. The review of the technical viability of the proposed cable systems recognizes that none of the Developers have done a detailed design that encompasses the nuances of the routes.

4.13.4. EMF

The NYPSC policy limits the electrical and magnetic fields produced by a transmission line. The maximum limits at the edge of the ROW for the electrical field is 1.6 kilovolts per meter (kV/m)¹ and for the magnetic field is 200 milligauss (mG)².

This NYPSC policy was written for overhead line, and the NYPSC has not modified its 1990 interim standard to specify ROWs widths for underground circuits when calculating EMF levels.


However, in PSEG-LI's recent Western Nassau 138 kV underground transmission project, the Article VII Order issued on September 19, 2019 (Case No. 17-T-0752), the Commission accepted the EMF study that demonstrated compliance with its magnetic field of 200 milligauss or less at the edge of the ROW calculated using 25 feet on either side of the conductor centerline.

The review team did not perform detailed EMF calculations. However, Electrical Consulting Engineers completed a screening of the EMF levels and found all circuits to be within the levels specified for the project in Case No. 17-T-0752.

Calculations provided by the Developers are preliminary in nature and will have to be confirmed during detailed engineering design. A detailed engineering design would require several investigations that have not yet been performed including comprehensive survey, route agreement with stakeholders along a route that has not yet been permitted or approved, test pits to locate existing underground utilities, and obstructions that could impact final route selection and duct bank design. The findings might result in design modifications regarding burial depth or duct bank design.

¹ The applicable electric field strength standards established by the PSC are set forth in Opinion No. 78-13 (issued June 19, 1978).

² The magnetic field standards established by the PSC are set forth in the PSC's Interim Policy Statement on Magnetic Fields, issued September 11, 1990. This statement also reaffirmed the electric field strength standards set in Opinion No. 78-13.


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4.13.5. Transmission Line Conductor Ampacity Ratings

Electrical Consulting Engineers' assessment of cable ratings discussed in this report are based on the respective installation design details provided by each of the developers along with knowledge of usual industry practices. In all cases, the respective developers did not appear to perform a thorough detailed design of the cable routes; this is not expected at this stage. A detailed engineering design would require several investigations that have not yet been performed including comprehensive survey, route agreement with stakeholders, soils investigations, test pits to locate existing underground utilities and obstructions that could impact final route selection or existing parallel or crossing power cables that could be affected by mutual heating, and route thermal survey along the route to characterize final design requirements, cable ampacity and cable selection. As this is the case, while developer has performed calculations, they are fundamentally categorized as "preliminary" because there are several activities yet to be completed before a detailed design is complete. Rating assessments were intended to generally verify that the developers' stated cable size would reasonably achieve the stated rating with some spare capacity considered to allow for factors that might reduce the ratings of the cables along the specific design route.

In most cases, the developers only provided generalized information about their cable designs and based on nominal trench conditions, but not detailed manufacturer's catalog cut sheets. Representative data and industry-accepted calculation methods for the respective cable types consistent with industry specifications and standards such as Association of Edison Illuminating Companies (AEIC), IEEE, ICEA, IEC, CIGRE and others was used. This is relevant for considering the electrical parameters, ratings, and other calculations. Given that only nominal or example installation configurations are described by the developers, it is conceivable that each developers' proposed route(s) will include sections that will have more severe limitations than the nominal conditions described in each developer's proposal.

The following table shows a summary of the proposed line lengths, conductor types and conductor ratings for each proposal. No significant concerns were identified with the proposed conductor types and sizes.

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4.13.6. Terrestrial and Submarine Cable Analysis


4.13.6.1. Transmission Line Crossings

The waters surrounding Long Island and New York City contain a large number of existing submarine linear infrastructure, including electric/telecommunication cables, pipelines, and vehicle/railway/subway tunnels. This infrastructure is owned by a combination of private companies, and public entities such as the Metropolitan Transportation Authority (MTA) and Port Authority of New York and New Jersey. Publicly available data from the Office of Coastal Management was used to assess crossings of navigation channels, anchorage areas, pipeline areas, and submarine cable areas. Also, publicly available data for tunnels including the Federal Railroad Administration (NJ Transit), US Census Bureau (Lincoln/Holland/Battery Tunnels), and NYC OpenData (NYC subways) were reviewed to identified potential crossings and interferences. The comparative assessment is intended to give a general order of magnitude of the number of crossings, and the specific number is subject to verification by the developer in a detailed assessment.

Crossing of linear infrastructure will likely require approvals from the asset owner, as crossing over an existing asset will impact the owner's ability to maintain and repair a given asset as well as potentially impacting the operational performance where a heat-producing cable crosses another cable system. Failure to receive permission to cross existing linear infrastructure has a potential to result in a specific submarine route not being feasible.

Routes that are within Lower/Upper New York Bay and within the Hudson River cross a large quantity of existing linear infrastructure. Within the East River at the south end of Manhattan before entering the Hudson River, the routes for proposals T039, T043, and T044 cross five Subway tunnels and the Hugh L Carey (Battery) Tunnel. Additionally, the East River has potential shallow bedrock and the tunnels in the East River are in some cases very old and shallow. This could add further complications to crossing these tunnels. If proper burial depths could not be reached while crossing, armoring of the lines could be logistically challenging given the age of some of the tunnels.

In the Hudson River, proposals T039, T042, T043, and T044 cross the Lincoln, Holland, NJ Transit, and multiple Port Authority Trans-Hudson (PATH) tunnels. Additionally, there are numerous pipelines and cables spanning from the Atlantic Ocean (*i.e.*, the New York Bight) all the way up the Hudson River that must be crossed by portions of these projects' routes.

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Further discussion and a table showing a breakdown of Tunnel, Cable, and Pipeline crossings are included in the environmental portion of this report including details of Navigation Channel and Anchorage Crossings.

4.13.6.2. Duct Banks and Manholes


LS Power's and Propel NY's duct bank cross-sectional drawings show no spare conduits, while NextEra included spare conduits in the duct bank.

Propel NY has proposed using conduits installed in granular backfill for areas on Long Island and New Rochelle but with concrete-encased conduits for areas in New York City. LS Power and NextEra proposed concrete-encased conduits. For the following reasons, the independent cost estimate for all projects assumed all conduit will be encased with concrete:

- Concrete encasement is often the standard of construction to minimize or avoid soil subsidence especially where construction will be near or under roadways that are critical infrastructure for the communities through which a new underground transmission circuit will be routed.
- Concrete encasement also provides a barrier to mechanical damage and dig-in in underground utility corridors where other existing underground facilities need to be maintained and future underground facilities could be constructed.
- Furthermore, concrete thermal backfills are known to provide consistent thermal properties over a wider range of moisture levels and, therefore, provide greater resiliency to variations in climate or weather that impact ground water levels and localized soil moisture content.
- Re-using spoils from underground construction also may require stockpiling the material and additional traffic impacts from hauling material between the construction localities or on site.

4.13.6.3. Terrestrial Cable Installations

All the projects propose installing underground transmission lines predominately within existing utility rights-of-way or public thoroughfares. Most of the terrestrial cable installation concerns relate to space constraints for the installation of major road

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crossings requiring Horizontal Directional Drilling (HDD) or Jack and Bore applications and traffic controls and are discussed in detail in the field review portion of this report.


The width of excavation and working space was considered in the field review including installing manholes, off-loading materials from transporting tractor and trailers, construction and installation vehicles accessing a work site, loading out excavated material, etc. Underground utilities that were visible from the route review were identified such as water, sewer, fiber, and gas, storm drains and any overhead obstructions they may present an issue with our preliminary review of the routes. A thorough investigation would need to be completed during detailed engineering using GPR, Pot holing, and availability of utility mapping.

A reliability concern can exist where multiple circuits are contained in the same duct bank. A “dig in” at a location can damage a duct bank and potentially cause an outage on more than one circuit. Some proposals have more multi circuit ducts than others. The Propel NY proposals have the least number of multiple circuits and include double trenches to minimize the amount of risk for this concern. Propel NY proposals T047 and T048 have no double circuit lines. Propel NY proposals T049 and T051 each have one double circuit line with a shared trench and T052 and T053 each have one double circuit line with separate trenches.

Terrestrial cable installations utilize methods including open-cut trenching, pipe-jacking (jack-and-bore), microtunneling, and HDD. Each method will have a corresponding risk and impact on factors such as traffic control, environmental impact, seasonal impact, and permitting. Other factors held constant, longer routes or multiple parallel routes will tend to have greater risk and longer project schedules than shorter routes.

4.13.6.4. Submarine Cable Installations

All the projects propose installing some submarine transmission lines of either HVDC or AC cables that route through the marine waters surrounding New York. The waterways that these cables could cross vary between proposals and include but are not limited to Long Island Sound, Atlantic Ocean, Lower New York Bay, Upper New York Bay, East River, and Hudson River. The proposed installation methods include jet trenching/plow, chain cut trenching, and HDD. When routing in the marine waters surrounding New York there are numerous resources and specially designated areas that must be crossed or routed

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adjacent to, including designated anchorage zones and navigation areas. Approaching or crossing these areas in some cases may have implications to a project's cost or timeline.


LS Power proposes single-conductor cable for their submarine installation whereas both NextEra and Propel NY propose multi-core cables (i.e., conductors wrapped together in a bundle). An advantage of using single-conductor cable for the submarine installation is that in the event of damage or failure, it may be possible to retrieve one phase without disturbing the other phases to make the repair.

It's a very difficult to estimate submarine cable installations without knowing the specifics of how the installation is planned and recognizing that the pricing may vary based on market conditions. Submarine cable installation utilizes specialized cable laying vessels. There are only a limited number of these vessels worldwide and some of the vessels are owned by individual cable manufacturers.

For example, cable laying vessels vary in capabilities and often several vessel types are needed to complete an installation depending on water depth, ground conditions, and debris removal requirements. In addition to the actual installations, they will also need to consider "ancillary" works (e.g., debris removal from the route, crossings of third-party assets, additional protection works such as rock dumping). All these activities are typically considered part of the installation and are often only included as a provisional sum at the bid stage, which is then amended, sometimes significantly, during contract execution. An additional risk exists where a proposed project route will cross an existing submarine facility due to potential permissions required for such crossings.

Once detailed design is completed a Developer will need to work with its supplier/installer and determine the best process for completing the installation. Submarine cable installation concerns apply to all the proposals.

Submarine cables eventually need to reach shore and often require some form of transition to land-based (terrestrial) cable. This transition is required since cables installed in the submarine environment are constructed differently than terrestrial cables. Also, some Developers have indicated that multiple cables per phase will be required on the submarine portion as compared to the land portion. In such a case, some form of transition, usually an above-ground substation, will be required at landing points at both ends of the submarine cable.

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5 Attachments

5.1. Capital Cost Estimates

5.2. Risk Register

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Long Island Offshore Wind Export Public Policy Transmission Need

Independent Cost Estimates



LS Power - T035		
REVISION: 1		
LS Power - T035 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1 - Longshore GIS Substation	\$ 138,747,951
Direct Labor, Material & Equipment Costs	2 - Southgate HVDC Converter Station and GIS Substation	\$ 889,292,814
Direct Labor, Material & Equipment Costs	3 - Northgate HVDC Converter Station and GIS Substation	\$ 914,861,797
Direct Labor, Material & Equipment Costs	4 - Millwood Interconnection	\$ 255,937
Direct Labor, Material & Equipment Costs	5 - Barrett Interconnection	\$ -
Direct Labor, Material & Equipment Costs	6 - Ruland Road Substation_ Interconnection	\$ 7,339,250
Direct Labor, Material & Equipment Costs	7 - Pleasant Valley Substation_ Interconnection	\$ 482,787
Direct Labor, Material & Equipment Costs	8 - Buchanan Substation_ Interconnection	\$ 482,787
Direct Labor, Material & Equipment Costs	9 - Pilgrim Road Substation_ Interconnection	\$ 14,375,435
Direct Labor, Material & Equipment Costs	10 - Freeport Substation_ Interconnection	\$ 482,787
Direct Labor, Material & Equipment Costs	11 - Valley Stream Substation_ Interconnection	\$ 568,100
Direct Labor, Material & Equipment Costs	12 - Empire Offshore Wind Substation_ Interconnection	\$ 568,100
Direct Labor, Material & Equipment Costs	13 - Control Center Upgrade	\$ 66,800
SUBTOTAL (Costs):		\$ 1,967,524,547
CONTRACTOR MARK-UP (OH&P)		\$ 160,109,618
SUBTOTAL (AFTER MU):		\$ 2,127,634,165
CONTINGENCY ON ENTIRE PROJECT		\$ 425,526,833
Substation TOTAL:		\$ 2,553,160,998
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	A Longshore-Southgate 345kV Onshore UG Cables -Three circuits	\$ 557,272,228
Direct Labor, Material & Equipment Costs	B Southgate-Northgate 400kV Onshore UG Cables -Three circuits	\$ 800,180,902
Direct Labor, Material & Equipment Costs	C. Southgate to Northgate Offshore Submarine Cables- Three Circuits	\$ 379,314,289
Direct Labor, Material & Equipment Costs	D. OH Transmission_ Existing Millwood Substation	\$ 3,600,000
Direct Labor, Material & Equipment Costs	E. 138kV Upgrades	\$ 6,855,142
SUBTOTAL (Costs):		\$ 1,747,222,561
CONTRACTOR MARK-UP (OH&P)		\$ 314,500,061
SUBTOTAL (AFTER MU):		\$ 2,061,722,622
CONTINGENCY ON ENTIRE PROJECT		\$ 412,344,524
Transmission Line TOTAL:		\$ 2,474,067,146
LS Power - T035Total Direct Cost		\$ 5,027,228,144

LS Power - T035 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1 - Longshore GIS Substation	\$ 46,569,858
Indirect Costs	2 - Southgate HVDC Converter Station and GIS Substation	\$ 99,806,761
Indirect Costs	3 - Northgate HVDC Converter Station and GIS Substation	\$ 103,842,723
Indirect Costs	4 - Millwood Interconnection	\$ 126,760
Indirect Costs	5 - Barrett Interconnection (Cost not included)	\$ -
Indirect Costs	6 - Ruland Road Substation_ Interconnection	\$ 1,924,421
Indirect Costs	7 - Pleasant Valley Substation_ Interconnection	\$ 224,232
Indirect Costs	8 - Buchanan Substation_ Interconnection	\$ 224,232
Indirect Costs	9 - Pilgrim Road Substation_ Interconnection	\$ 4,625,250
Indirect Costs	10 - Freeport Substation_ Interconnection	\$ 224,232
Indirect Costs	11 - Valley Stream Substation_ Interconnection	\$ 169,210
Indirect Costs	12 - Empire Offshore Wind Substation_ Interconnection	\$ 262,106
Indirect Costs	13 - Control Center Upgrade	\$ 9,000
SUBTOTAL (Costs):		\$ 258,008,786
CONTRACTOR MARK-UP (OH&P)		\$ 46,441,581
SUBTOTAL (AFTER MU):		\$ 304,450,367
CONTINGENCY ON ENTIRE PROJECT		\$ 60,890,073
Substation TOTAL:		\$ 365,340,440
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	A Longshore-Southgate 345kV Onshore UG Cables -Three circuits	\$ 138,612,644
Indirect Costs	B Southgate-Northgate 400kV Onshore UG Cables -Three circuits	\$ 197,718,723
Indirect Costs	C. Southgate to Northgate Offshore Submarine Cables- Three Circuits	\$ 88,714,142
Indirect Costs	D. OH Transmission_Existing Millwood Substation	\$ 900,000
Indirect Costs	E. 138kV Upgrades	\$ 1,741,743
SUBTOTAL (Costs):		\$ 427,687,251
CONTRACTOR MARK-UP (OH&P)		\$ 76,983,705
SUBTOTAL (AFTER MU):		\$ 504,670,956
CONTINGENCY ON ENTIRE PROJECT		\$ 100,934,191
Transmission Line TOTAL:		\$ 605,605,147
LS Power - T035 Total Indirect Cost		\$ 970,945,588
LS Power - T035 Total		\$ 5,998,173,732

LS Power - T035

1 - Longshore GIS Substation

Total: \$ 257,992,097

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
1 - Longshore GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,588,879	\$ 1,604,454	\$ 957,642	\$ 4,150,974
2. SUBSTATION FOUNDATIONS	\$ 5,124,404	\$ 5,095,699	\$ 3,095,369	\$ 13,315,472
3. SUBSTATION STRUCTURES	\$ 872,139	\$ 712,387	\$ 466,848	\$ 2,051,373
4. MAJOR EQUIPMENT	\$ 81,903,923	\$ 16,501,120	\$ 9,233,718	\$ 107,638,760
5. LOW VOLTAGE & CONTROL CABLE	\$ 363,938	\$ 98,413	\$ 19,683	\$ 482,034
6. CONDUIT & CABLE TRENCH	\$ 369,975	\$ 112,248	\$ 40,212	\$ 522,435
7. GROUND GRID	\$ 164,647	\$ 118,974	\$ 27,782	\$ 311,403
8. CONTROL ENCLOSURE	\$ 5,013,250	\$ 3,823,309	\$ 1,438,941	\$ 10,275,499
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 8,395,302	\$ 26,427,534	\$ 11,747,022	\$ 46,569,858
Turnkey cost (HVDC, GIS)	\$ 15,340,000	\$ 9,204,000	\$ 6,136,000	\$ 30,680,000
Non-Turnkey cost	\$ 88,456,456	\$ 45,290,138	\$ 20,891,215	\$ 154,637,809
SUBTOTAL (Costs):	\$ 103,796,456	\$ 54,494,138	\$ 27,027,215	\$ 185,317,809
CONTRACTOR MARK-UP (OH&P):	\$ 16,842,562	\$ 8,704,465	\$ 4,128,579	\$ 29,675,606
SUBTOTAL:	\$ 120,639,018	\$ 63,198,603	\$ 31,155,793	\$ 214,993,414
CONTINGENCY ON ENTIRE PROJECT	\$ 24,127,804	\$ 12,639,721	\$ 6,231,159	\$ 42,998,683
TOTAL:	\$ 144,766,821	\$ 75,838,324	\$ 37,386,952	\$ 257,992,097

Description of Work: New 345/138kV substation in a breaker and a half configuration to be located near the existing Barrett 138/69kV substation. The substation will have 3 connections to the Barrett 138kV substation controlled by phase angle regulators, positions to connect the Empire II offshore wind generation and/or other future offshore wind generation and 3 connections to the Southgate substation with shunt reactors to provide reactive compensation for the cables.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1 - Longshore GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 48,600	\$ 32,400	\$ 81,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,433	SY	4.85	7.20	4.80	\$ 16,652	\$ 24,720	\$ 16,480	\$ 57,852
1.4	Strip and Dispose Top Soil	7,260	CY		24.50	10.50	\$ -	\$ 177,870	\$ 76,230	\$ 254,100
1.5	Site Grading- Excavation for Substation Pad	21,780	CY		9.00	6.00	\$ -	\$ 196,020	\$ 130,680	\$ 326,700
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	11,761	CY		21.00	9.00	\$ -	\$ 246,985.20	\$ 105,850.80	\$ 352,836.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	17,642	CY		2.40	1.60	\$ -	\$ 42,340	\$ 28,227	\$ 70,567
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	11,761	CY	25.00	2.40	1.60	\$ 294,030	\$ 28,227	\$ 18,818	\$ 341,075
1.9	Blasting		EA	-			\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,572	LF	13.85	13.85	6.92	\$ 21,769	\$ 21,769	\$ 10,885	\$ 54,423
1.13	24' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Underground Detention Basin	2	EA	291,144.00	262,029.60	174,686.40	\$ 582,288	\$ 524,059	\$ 349,373	\$ 1,455,720
1.16	Seeding	12,896	SF	1.50	1.50	1.00	\$ 19,344	\$ 19,344	\$ 12,896	\$ 51,584
1.17	Erosion Control-Silt fence install & remove	2,430	LF	2.41	3.16	0.72	\$ 5,856	\$ 7,679	\$ 1,750	\$ 15,285

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.18	Temporary fencing	1,620	LF	7.50	5.25	2.25	\$ 12,150	\$ 8,505	\$ 3,645	\$ 24,300
1.19	Substation entrance with asphalt	667	SY	19.50	26.00	19.50	\$ 13,000	\$ 17,333	\$ 13,000	\$ 43,333
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,588,879	\$ 1,604,454	\$ 957,642	\$ 4,150,974
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	235	CY	703.89	804.44	502.78	\$ 165,160	\$ 188,754	\$ 117,971	\$ 471,885
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	305	CY	703.89	804.44	502.78	\$ 214,333	\$ 244,952	\$ 153,095	\$ 612,380
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Disconnect Switch -(Double Break)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345/138KV, Single-Phase 420/560/700MVA Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.15	345kV, Shunt Reactor with oil containment-150MVAR	915	CY	703.89	804.44	502.78	\$ 644,055	\$ 736,063	\$ 460,039	\$ 1,840,157
2.16	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	1,335	CY	703.89	804.44	502.78	\$ 939,686	\$ 1,073,927	\$ 671,205	\$ 2,684,819
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	576	CY	703.89	804.44	502.78	\$ 405,438	\$ 463,357	\$ 289,598	\$ 1,158,394
2.22	345kV, GIS Enclosure-BLDG	1,176	CY	703.89	804.44	502.78	\$ 827,769	\$ 946,021	\$ 591,263	\$ 2,365,054
2.23	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Dead-Tank Breaker	13	CY	703.89	804.44	502.78	\$ 9,385	\$ 10,726	\$ 6,704	\$ 26,815
2.25	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch	145	CY	703.89	804.44	502.78	\$ 102,373	\$ 116,998	\$ 73,124	\$ 292,494
2.28	138kV, Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80"	-	EA				\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	Steel grating and support beams-transformer moat	389,520	LB	2.73	1.17	0.50	\$ 1,064,098	\$ 455,349	\$ 195,150	\$ 1,714,596
TOTAL - 345KV FOUNDATION							\$ 5,124,404	\$ 5,095,699	\$ 3,095,369	\$ 13,315,472
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	2	EA	64,350.00	38,610.00	25,740.00	\$ 128,700	\$ 77,220	\$ 51,480	\$ 257,400
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	75	EA	8,346.00	5,758.74	3,839.16	\$ 625,950	\$ 431,906	\$ 287,937	\$ 1,345,793
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, Disconnect Switch -(Double Break)	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	6	EA	4,896.84	4,896.84	2,448.42	\$ 29,381	\$ 29,381	\$ 14,691	\$ 73,453
3.18	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, Surge arrester	9	EA	4,066.40	1,443.00	962.00	\$ 36,598	\$ 12,987	\$ 8,658	\$ 58,243
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80	720	LF	25.00	184.94	123.29	\$ 18,000	\$ 133,155	\$ 88,770	\$ 239,926
3.25	AL. Bus fittings	1	LS	19,080.00	19,080.00	9,540.00	\$ 19,080	\$ 19,080	\$ 9,540	\$ 47,700
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 872,139	\$ 712,387	\$ 466,848	\$ 2,051,373
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	18	EA	852,222.22	511,333.33	340,888.89	\$ 15,340,000	\$ 9,204,000	\$ 6,136,000	\$ 30,680,000
4.2	345kV, GIS air terminal-3 Ph									
4.3	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch -(Double Break)	0	EA	68,900.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 420/560/700MVA Power Transformer with oil containment	3	EA	6,280,000.00	3,520.00	880.00	\$ 18,840,000	\$ 10,560	\$ 2,640	\$ 18,853,200
4.8	Transport & Testing- Transformer	3	EA		1,030,400.00	441,600.00	\$ -	\$ 3,091,200	\$ 1,324,800	\$ 4,416,000
4.9	345kV, Shunt Reactor with oil containment-150MVAR	3	EA	2,629,516.50	3,520.00	880.00	\$ 7,888,550	\$ 10,560	\$ 2,640	\$ 7,901,750
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	3	EA		339,150.00	145,350.00	\$ -	\$ 1,017,450	\$ 436,050	\$ 1,453,500
4.12	345kV, Phase Angle Regulator with oil containment	3	EA	12,570,303.00	3,520.00	880.00	\$ 37,710,909	\$ 10,560	\$ 2,640	\$ 37,724,109
4.13	Transport & Testing- PAR	3	EA		715,400.00	306,600.00	\$ -	\$ 2,146,200	\$ 919,800	\$ 3,066,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	3	EA	112,000.00	13,559.00	5,811.00	\$ 336,000	\$ 40,677	\$ 17,433	\$ 394,110
4.21	138kV, Disconnect Switch	6	EA	12,566.67	11,875.50	5,089.50	\$ 75,400	\$ 71,253	\$ 30,537	\$ 177,190
4.22	138kV, Cable sealing end	3	EA	11,600.00	3,150.00	1,350.00	\$ 34,800	\$ 9,450	\$ 4,050	\$ 48,300
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor (outdoor)	1,815	LF	550.00	275.00	82.50	\$ 998,250	\$ 499,125	\$ 149,738	\$ 1,647,113
4.27	345kV Gas-Insulated Bus Conductor-elbow (outdoor)	48	EA	2,500.00	1,250.00	375.00	\$ 120,000	\$ 60,000	\$ 18,000	\$ 198,000
4.28	Transport & Testing- GIL	1	LS		201,285.00	134,190.00	\$ -	\$ 201,285	\$ 134,190	\$ 335,475
TOTAL - MAJOR EQUIPMENT							\$ 81,903,923	\$ 16,501,120	\$ 9,233,718	\$ 107,638,760

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	68,700	LF	5.30	1.43	0.29	\$ 363,938	\$ 98,413	\$ 19,683	\$ 482,034
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 363,938	\$ 98,413	\$ 19,683	\$ 482,034
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,500	LF	11.15	10.80	5.40	\$ 50,175	\$ 48,600	\$ 24,300	\$ 123,075
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,200	LF	266.50	53.04	13.26	\$ 319,800	\$ 63,648	\$ 15,912	\$ 399,360
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 369,975	\$ 112,248	\$ 40,212	\$ 522,435
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	16,890	LF	2.09	3.42	1.46	\$ 35,317	\$ 57,684	\$ 24,722	\$ 117,723
7.2	Caweld, DSA, 4/0 , T, CROSS	450	EA	165.00	75.00		\$ 74,250	\$ 33,750	\$ -	\$ 108,000
7.3	Ground Rod, 3/4" x 15'	408	EA	135.00	67.50	7.50	\$ 55,080	\$ 27,540	\$ 3,060	\$ 85,680
TOTAL - GROUND GRID							\$ 164,647	\$ 118,974	\$ 27,782	\$ 311,403
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	1	EA	964,411.37	675,087.96	289,323.41	\$ 964,411	\$ 675,088	\$ 289,323	\$ 1,928,823
8.2	345kV, GIS Enclosure-BLDG	1	EA	2,211,495.05	1,548,046.53	663,448.51	\$ 2,211,495	\$ 1,548,047	\$ 663,449	\$ 4,422,990
8.3	Primary Line Relays (87L): SEL-411L	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.4	Backup Line Relays (87L): GE L90	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.5	Primary Bay Control: SEL-451	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.6	Backup Bay Control: SEL-451	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	2	EA	12,500.00	10,000.00	2,500.00	\$ 25,000	\$ 20,000	\$ 5,000	\$ 50,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	2	EA	12,500.00	10,000.00	2,500.00	\$ 25,000	\$ 20,000	\$ 5,000	\$ 50,000
8.13	HMI Panel	2	EA	12,500.00	10,000.00	2,500.00	\$ 25,000	\$ 20,000	\$ 5,000	\$ 50,000
8.14	125VDC Battery System	2	EA	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,013,250	\$ 3,823,309	\$ 1,438,941	\$ 10,275,499
1 - Longshore GIS Substation							\$ 95,401,154	\$ 28,066,604	\$ 15,280,192	\$ 138,747,951
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		980,237.88	420,101.95	\$ -	\$ 980,238	\$ 420,102	\$ 1,400,340
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,080,679.51		\$ -	\$ 1,080,680	\$ -	\$ 1,080,680
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		4,322,718.03		\$ -	\$ 4,322,718	\$ -	\$ 4,322,718
9.4	Utility PM and Project Oversight	1.00	LS		1,080,679.51		\$ -	\$ 1,080,680	\$ -	\$ 1,080,680
9.5	Site Accommodation, Facilities, Storage	1.00	LS			1,080,679.51	\$ -	\$ -	\$ 1,080,680	\$ 1,080,680
	Engineering									
9.6	Design Engineering	1.00	LS		8,645,436.06		\$ -	\$ 8,645,436	\$ -	\$ 8,645,436
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		756,475.65		\$ -	\$ 756,476	\$ -	\$ 756,476
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,052,548.15		\$ -	\$ 4,052,548	\$ -	\$ 4,052,548
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		101,477.88		\$ -	\$ 101,478	\$ -	\$ 101,478
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,080,679.51		\$ -	\$ 1,080,680	\$ -	\$ 1,080,680
9.13	Environmental-special studies/investigation	1.00	LS		3,850,000.00		\$ -	\$ 3,850,000	\$ -	\$ 3,850,000
9.14	Warranties / LOC's	1.00	LS		324,203.85		\$ -	\$ 324,204	\$ -	\$ 324,204
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.16	Real Estate (Acquisition)	1.00	LS		-	4,890,428.00	\$ -	\$ -	\$ 4,890,428	\$ 4,890,428
9.17	Legal Fees (Real estate)	1.00	LS		-	146,712.84	\$ -	\$ -	\$ 146,713	\$ 146,713
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS			\$ 5,200,000	\$ -	\$ -	\$ 5,200,000	\$ 5,200,000
9.20	Sales Tax on Materials	8.80%	LS	95,401,154.17			\$ 8,395,302	\$ -	\$ -	\$ 8,395,302
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		138,747.95		\$ -	\$ 138,748	\$ -	\$ 138,748
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 8,395,302	\$ 26,427,534	\$ 11,747,022	\$ 46,569,858

LS Power - T035

2 - Southgate HVDC Converter Station and GIS Substation

Total: \$ 1,285,987,078

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
2 - Southgate HVDC Converter Station and GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 5,528,344	\$ 5,571,006	\$ 3,475,822	\$ 14,575,171
2. SUBSTATION FOUNDATIONS	\$ 2,840,173	\$ 2,738,737	\$ 1,652,082	\$ 7,230,992
3. SUBSTATION STRUCTURES	\$ 349,932	\$ 429,409	\$ 280,223	\$ 1,059,564
4. MAJOR EQUIPTMENT	\$ 513,940,664	\$ 167,230,050	\$ 161,279,125	\$ 842,449,839
5. LOW VOLTAGE & CONTROL CABLE	\$ 790,652	\$ 213,801	\$ 42,760	\$ 1,047,213
6. CONDUIT & CABLE TRENCH	\$ 5,965,897	\$ 3,167,060	\$ 1,672,921	\$ 10,805,879
7. GROUND GRID	\$ 676,335	\$ 490,642	\$ 115,432	\$ 1,282,409
8. CONTROL ENCLOSURE	\$ 5,296,374	\$ 4,049,809	\$ 1,495,566	\$ 10,841,749
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 47,114,177	\$ 20,766,920	\$ 31,925,664	\$ 99,806,761
Turnkey cost (HVDC, GIS)	\$ 474,340,000	\$ 162,204,000	\$ 159,136,000	\$ 795,680,000
Non-Turnkey cost	\$ 108,162,547	\$ 42,453,433	\$ 42,803,595	\$ 193,419,575
SUBTOTAL (Costs):	\$ 582,502,547	\$ 204,657,433	\$ 201,939,595	\$ 989,099,575
CONTRACTOR MARK-UP (OH&P):	\$ 47,929,658	\$ 17,373,858	\$ 17,252,807	\$ 82,556,323
SUBTOTAL:	\$ 630,432,205	\$ 222,031,291	\$ 219,192,402	\$ 1,071,655,898
CONTINGENCY ON ENTIRE PROJECT	\$ 126,086,441	\$ 44,406,258	\$ 43,838,480	\$ 214,331,180
TOTAL:	\$ 756,518,646	\$ 266,437,550	\$ 263,030,882	\$ 1,285,987,078

Description of Work: New 345/138kV substation in a breaker and a half configuration with 3 +400kV monopole DC converter stations to located near the existing Ruland Road 138/69kV substation. The AC portion of the substation will have 3 connections to the Ruland road 138kV substation, positions to connect the future "Ruland Road" offshore wind generation, 3 connections to HVDC converter stations and 3 connections to Longshore substation with shunt reactors to provide reactive compensation for the cables.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2 - Southgate HVDC Converter Station and GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	18.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 378,000	\$ 252,000	\$ 630,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	10,841	SY	4.85	7.20	4.80	\$ 52,577	\$ 78,053	\$ 52,035	\$ 182,665
1.4	Strip and Dispose Top Soil	29,040	CY		24.50	10.50	\$ -	\$ 711,480	\$ 304,920	\$ 1,016,400
1.5	Site Grading- Excavation for Substation Pad	87,120	CY		9.00	6.00	\$ -	\$ 784,080	\$ 522,720	\$ 1,306,800
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	47,045	CY		21.00	9.00	\$ -	\$ 987,940.80	\$ 423,403.20	\$ 1,411,344.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	70,567	CY		2.40	1.60	\$ -	\$ 169,361	\$ 112,908	\$ 282,269
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	47,045	CY	25.00	2.40	1.60	\$ 1,176,120	\$ 112,908	\$ 75,272	\$ 1,364,299
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	87,120	SY	11.00	6.00	4.00	\$ 958,320	\$ 522,720	\$ 348,480	\$ 1,829,520
1.11	Site Surfacing - Aggregate 6" Thick	87,120	SY	16.50	4.50	3.00	\$ 1,437,480	\$ 392,040	\$ 261,360	\$ 2,090,880
1.12	7' Station Fence w/ Barbed Wire & Grounding	3,708	LF	13.85	13.85	6.92	\$ 51,348	\$ 51,348	\$ 25,674	\$ 128,371
1.13	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Underground Detention Basin	2	EA	579,024.00	521,121.60	347,414.40	\$ 1,158,048	\$ 1,042,243	\$ 694,829	\$ 2,895,120
1.16	Seeding	30,048	SF	1.50	1.50	1.00	\$ 45,072	\$ 45,072	\$ 30,048	\$ 120,192
1.17	Erosion Control-Silt fence install & remove	5,634	LF	2.41	3.16	0.72	\$ 13,578	\$ 17,803	\$ 4,056	\$ 35,438
1.18	Temporary fencing	3,756	LF	7.50	5.25	2.25	\$ 28,170	\$ 19,719	\$ 8,451	\$ 56,340
1.19	Substation entrance with asphalt	667	SY	19.50	26.00	19.50	\$ 13,000	\$ 17,333	\$ 13,000	\$ 43,333
1.20	Concrete curb	180	LF	26.00	27.30	11.70	\$ 4,680	\$ 4,914	\$ 2,106	\$ 11,700

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Noise/Visual Wall	2,500	LF	227.50	91.00	136.50	\$ 568,750	\$ 227,500	\$ 341,250	\$ 1,137,500
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 5,528,344	\$ 5,571,006	\$ 3,475,822	\$ 14,575,171
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	117	CY	703.89	804.44	502.78	\$ 82,580	\$ 94,377	\$ 58,986	\$ 235,942
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.7	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138kV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.16	345kV, Shunt Reactor with oil containment-150MVAR	915	CY	703.89	804.44	502.78	\$ 644,055	\$ 736,063	\$ 460,039	\$ 1,840,157
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	576	CY	703.89	804.44	502.78	\$ 405,438	\$ 463,357	\$ 289,598	\$ 1,158,394
2.23	345kV, GIS Enclosure-BLDG		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Equipment foundations		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Converter phase reactor pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Converter enclosure pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Control room pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Station transformer pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -Cooling fans pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-AC Switch Yard Equipment foundations		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- Converter Transformer pad with oil containment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	HVDC VSC Converter Station- DE A frame foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	HVDC VSC Converter Station- Cable sealing end		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Dead-Tank Breaker	13	CY	703.89	804.44	502.78	\$ 9,385	\$ 10,726	\$ 6,704	\$ 26,815
2.36	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Disconnect Switch	145	CY	703.89	804.44	502.78	\$ 102,373	\$ 116,998	\$ 73,124	\$ 292,494
2.39	138kV, Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.40	138kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.41	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	73	CY	703.89	804.44	502.78	\$ 51,215	\$ 58,531	\$ 36,582	\$ 146,328
2.42	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - 345KV FOUNDATION							\$ 2,840,173	\$ 2,738,737	\$ 1,652,082	\$ 7,230,992
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	1	EA	64,350.00	38,610.00	25,740.00	\$ 64,350	\$ 38,610	\$ 25,740	\$ 128,700
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	15	EA	8,346.00	5,758.74	3,839.16	\$ 125,190	\$ 86,381	\$ 57,587	\$ 269,159
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	6	EA							

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.20	138kV, Surge arrester	9	EA	4,066.40	1,443.00	962.00	\$ 36,598	\$ 12,987	\$ 8,658	\$ 58,243
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	1	EA	45,045.00	27,027.00	18,018.00	\$ 45,045	\$ 27,027	\$ 18,018	\$ 90,090
3.22	AL. Bus Tubing, 5" SCH 80	1,210	LF	25.00	184.94	123.29	\$ 30,250	\$ 223,775	\$ 149,183	\$ 403,208
3.23	AL. Bus fittings	1	LS	36,300.00	36,300.00	18,150.00	\$ 36,300	\$ 36,300	\$ 18,150	\$ 90,750
3.24	HVDC VSC Converter Station -DC Equipment stands	78	EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands	63	EA				\$ -	\$ -	\$ -	\$ -
3.26	HVDC VSC Converter Station- DE A frame	3	EA				\$ -	\$ -	\$ -	\$ -
3.27	HVDC VSC Converter Station- Cable sealing end stand	9	EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 349,932	\$ 429,409	\$ 280,223	\$ 1,059,564
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	18	EA	852,222.22	511,333.33	340,888.89	\$ 15,340,000	\$ 9,204,000	\$ 6,136,000	\$ 30,680,000
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	3	EA	9,980,000.00	3,520.00	880.00	\$ 29,940,000	\$ 10,560	\$ 2,640	\$ 29,953,200
4.8	Transport & Testing- Transformer	3	EA		1,170,400.00	501,600.00	\$ -	\$ 3,511,200	\$ 1,504,800	\$ 5,016,000
4.9	345kV, Shunt Reactor with oil containment-150MVAR	3	EA	2,629,516.50	3,520.00	880.00	\$ 7,888,550	\$ 10,560	\$ 2,640	\$ 7,901,750
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	3	EA		339,150.00	145,350.00	\$ -	\$ 1,017,450	\$ 436,050	\$ 1,453,500
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	3	EA	183,000.00	13,559.00	5,811.00	\$ 549,000	\$ 40,677	\$ 17,433	\$ 607,110
4.21	138kV, Disconnect Switch	6	EA	37,700.00	11,875.50	5,089.50	\$ 226,200	\$ 71,253	\$ 30,537	\$ 327,990
4.22	138kV, Cable sealing end-3 Ph	9	EA	11,600.00	1,050.00	450.00	\$ 104,400	\$ 9,450	\$ 4,050	\$ 117,900
4.23	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.25	HVDC 1200MW Monopoles	3.0	EA	153,000,000.00	51,000,000.00	51,000,000.00	\$ 459,000,000	\$ 153,000,000	\$ 153,000,000	\$ 765,000,000
4.26	HVDC VSC Converter Station -DC transducer	6.0	EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor	18.0	EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans	3.0	EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer	9.0	EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure	3.0	EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure	3.0	EA				\$ -	\$ -	\$ -	\$ -
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)	550	LF	550.00	275.00	82.50	\$ 302,500.00	\$ 151,250.00	\$ 45,375.00	\$ 499,125
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)	12	EA	2,500.00	1,250.00	375.00	\$ 30,000	\$ 15,000	\$ 4,500	\$ 49,500
4.28	Transport & Testing- GIL	1	LS		59,850.00	39,900.00	\$ -	\$ 59,850	\$ 39,900	\$ 99,750
TOTAL - MAJOR EQUIPMENT							\$ 513,940,664	\$ 167,230,050	\$ 161,279,125	\$ 842,449,839
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	149,250	LF	5.30	1.43	0.29	\$ 790,652	\$ 213,801	\$ 42,760	\$ 1,047,213
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 790,652	\$ 213,801	\$ 42,760	\$ 1,047,213
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	36,000	LF	11.15	10.80	5.40	\$ 401,400	\$ 388,800	\$ 194,400	\$ 984,600
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,125	LF	266.50	53.04	13.26	\$ 566,313	\$ 112,710	\$ 28,178	\$ 707,200
6.7	345kV UG Duct Bank- 6 conduits	2,925	FT	333.12	190.65	79.74	\$ 974,365.35	\$ 557,656.94	\$ 233,235.08	\$ 1,765,257.36
6.8	400kV HVDC UG Duct Bank- 2 conduits	4,790	FT	133.04	63.55	26.58	\$ 637,255.78	\$ 304,407.60	\$ 127,315.79	\$ 1,068,979.17
6.9	Procurement & Installation- 345kV single-core, 2000mm^2 XLPE cable	8,775	FT	154.00	105.00	70.00	\$ 1,351,350.00	\$ 921,375.00	\$ 614,250.00	\$ 2,886,975.00
6.10	Procurement & Installation- 400kV single-core, 2500mm^2 XLPE cable	4,790	FT	183.00	105.00	70.00	\$ 876,570.00	\$ 502,950.00	\$ 335,300.00	\$ 1,714,820.00
6.11	Cable termination- 345kV single-core, 2000mm^2 XLPE cable	24	EA	27,805.00	8,205.40	2,344.40	\$ 667,320.00	\$ 196,929.60	\$ 56,265.60	\$ 920,515.20

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.12	Cable termination- 400kV single-core, 2500mm^2 XLPE cable	12	EA	27,805.00	8,205.40	2,344.40	\$ 333,660.00	\$ 98,464.80	\$ 28,132.80	\$ 460,257.60
6.13	Fiber Optic Cable	7,715	LF	7.40	3.33	2.22	\$ 57,068	\$ 25,696	\$ 17,130	\$ 99,894
6.14	Ground Continuity Conductor	7,715	LF	13.04	7.53	5.02	\$ 100,596	\$ 58,071	\$ 38,714	\$ 197,381
TOTAL - CONDUIT & CABLE TRENCH							\$ 5,965,897	\$ 3,167,060	\$ 1,672,921	\$ 10,805,879
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	70,050	LF	2.09	3.42	1.46	\$ 146,475	\$ 239,242	\$ 102,532	\$ 488,249
7.2	Caweld, DSA, 4/0 , T, CROSS	1,804	EA	165.00	75.00		\$ 297,660	\$ 135,300	\$ -	\$ 432,960
7.3	Ground Rod, 3/4" x 15'	1,720	EA	135.00	67.50	7.50	\$ 232,200	\$ 116,100	\$ 12,900	\$ 361,200
TOTAL - GROUND GRID							\$ 676,335	\$ 490,642	\$ 115,432	\$ 1,282,409
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	1	EA	964,411.37	675,087.96	289,323.41	\$ 964,411	\$ 675,088	\$ 289,323	\$ 1,928,823
8.2	345kV, GIS Enclosure-BLDG	1	EA	2,211,495.05	1,548,046.53	663,448.51	\$ 2,211,495	\$ 1,548,047	\$ 663,449	\$ 4,422,990
8.3	Primary Line Relays (87L): SEL-411L	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.4	Backup Line Relays (87L): GE L90	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.5	Primary Bay Control: SEL-451	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.6	Backup Bay Control: SEL-451	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	5	EA	12,500.00	10,000.00	2,500.00	\$ 62,500	\$ 50,000	\$ 12,500	\$ 125,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	5	EA	12,500.00	10,000.00	2,500.00	\$ 62,500	\$ 50,000	\$ 12,500	\$ 125,000
8.13	HMI Panel	5	EA	12,500.00	10,000.00	2,500.00	\$ 62,500	\$ 50,000	\$ 12,500	\$ 125,000
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,296,374	\$ 4,049,809	\$ 1,495,566	\$ 10,841,749
2 - Southgate HVDC Converter Station and GIS Substation							\$ 535,388,370	\$ 183,890,514	\$ 170,013,930	\$ 889,292,814
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,139,755.54	488,466.66	\$ -	\$ 1,139,756	\$ 488,467	\$ 1,628,222
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		936,128.14		\$ -	\$ 936,128	\$ -	\$ 936,128
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		3,744,512.58		\$ -	\$ 3,744,513	\$ -	\$ 3,744,513
9.4	Utility PM and Project Oversight	1.00	LS		936,128.14		\$ -	\$ 936,128	\$ -	\$ 936,128
9.5	Site Accommodation, Facilities, Storage	1.00	LS			936,128.14	\$ -	\$ -	\$ 936,128	\$ 936,128
	Engineering									
9.6	Design Engineering	1.00	LS		7,489,025.15		\$ -	\$ 7,489,025	\$ -	\$ 7,489,025
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		655,289.70		\$ -	\$ 655,290	\$ -	\$ 655,290
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,510,480.54		\$ -	\$ 3,510,481	\$ -	\$ 3,510,481
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		235,690.56		\$ -	\$ 235,691	\$ -	\$ 235,691
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		936,128.14		\$ -	\$ 936,128	\$ -	\$ 936,128
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		280,838.44		\$ -	\$ 280,838	\$ -	\$ 280,838
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	4,632,980.00	\$ -	\$ -	\$ 4,632,980	\$ 4,632,980
9.17	Legal Fees (Real estate)	1.00	LS		-	138,989.40	\$ -	\$ -	\$ 138,989	\$ 138,989
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 25,720,000	\$ -	\$ -	\$ 25,720,000	\$ 25,720,000
9.20	Sales Tax on Materials	8.80%	LS	535,388,370.36			\$ 47,114,177	\$ -	\$ -	\$ 47,114,177
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		889,292.81		\$ -	\$ 889,293	\$ -	\$ 889,293
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 47,114,177	\$ 20,766,920	\$ 31,925,664	\$ 99,806,761

LS Power - T035

3 - Northgate HVDC Converter Station and GIS Substation

Total: \$ 1,328,627,681

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Northgate HVDC Converter Station and GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 10,337,697	\$ 34,865,838	\$ 39,497,979	\$ 84,701,514
2. SUBSTATION FOUNDATIONS	\$ 2,302,316	\$ 2,631,219	\$ 1,644,512	\$ 6,578,047
3. SUBSTATION STRUCTURES	\$ 1,727,682	\$ 1,614,244	\$ 1,063,322	\$ 4,405,248
4. MAJOR EQUIPMENT	\$ 477,031,750	\$ 163,130,875	\$ 158,875,763	\$ 799,038,388
5. LOW VOLTAGE & CONTROL CABLE	\$ 475,451	\$ 128,567	\$ 25,713	\$ 629,731
6. CONDUIT & CABLE TRENCH	\$ 4,522,578	\$ 2,249,529	\$ 1,200,010	\$ 7,972,117
7. GROUND GRID	\$ 855,372	\$ 621,302	\$ 146,455	\$ 1,623,129
8. CONTROL ENCLOSURE	\$ 4,832,312	\$ 3,678,559	\$ 1,402,753	\$ 9,913,624
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 44,183,494	\$ 28,977,890	\$ 30,681,340	\$ 103,842,723
Turnkey cost (HVDC, GIS)	\$ 471,840,000	\$ 160,704,000	\$ 158,136,000	\$ 790,680,000
Non-Turnkey cost	\$ 74,428,651	\$ 77,194,022	\$ 76,401,847	\$ 228,024,520
SUBTOTAL (Costs):	\$ 546,268,651	\$ 237,898,022	\$ 234,537,847	\$ 1,018,704,520
CONTRACTOR MARK-UP (OH&P):	\$ 41,707,557	\$ 23,537,164	\$ 23,240,492	\$ 88,485,214
SUBTOTAL:	\$ 587,976,208	\$ 261,435,187	\$ 257,778,339	\$ 1,107,189,734
CONTINGENCY ON ENTIRE PROJECT	\$ 117,595,242	\$ 52,287,037	\$ 51,555,668	\$ 221,437,947
TOTAL:	\$ 705,571,450	\$ 313,722,224	\$ 309,334,007	\$ 1,328,627,681

Description of Work: New 345 switchyard in a breaker and a half configuration with 3 +400kV monopole DC converter stations to be located near the existing Millwood 345kV substation. The AC portion of the substation will have 3 connections to the Millwood 345kV substation, 3 connections to HVDC converter stations, 2 connections to the Wood Street 345kV substation and 2 connections to the Buchanan 345kV substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3 - Northgate HVDC Converter Station and GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	18.5	ACRE	-	42,000.00	28,000.00	\$ -	\$ 777,000	\$ 518,000	\$ 1,295,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20' (interior)	11,450	SY	4.85	7.20	4.80	\$ 55,533	\$ 82,440	\$ 54,960	\$ 192,933
1.4	Existing access road improvement	15,000	SF	10.50	14.00	9.00	\$ 157,500.00	\$ 210,000.00	\$ 135,000.00	\$ 502,500.00
1.5	New access road- exterior	500	LF	773.76	696.38	464.26	\$ 386,880.00	\$ 348,192.00	\$ 232,128.00	\$ 967,200.00
1.6	Strip and Dispose Top Soil	29,847	CY		24.50	10.50	\$ -	\$ 731,243	\$ 313,390	\$ 1,044,633
1.7	Site Grading- Excavation for Substation Pad- Soil excavation	179,080	CY		9.00	6.00	\$ -	\$ 1,611,720	\$ 1,074,480	\$ 2,686,200
1.8	Site Grading- Excavation for Substation Pad-Rock excavaton	179,080	CY		120.00	180.00	\$ -	\$ 21,489,600.00	\$ 32,234,400.00	\$ 53,724,000.00
1.9	Site Grading- Excavation for Substation Pad-Rock excavaton-Hauling and disposal	193,406	CY		21.00	9.00	\$ -	\$ 4,061,534.40	\$ 1,740,657.60	\$ 5,802,192.00
1.10	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	214,896	CY		2.40	1.60	\$ -	\$ 515,750.40	\$ 343,833.60	\$ 859,584.00
1.11	Site Grading -Fill for Substation Pad (import, compacted in place)	143,264	CY	25.00	2.40	1.60	\$ 3,581,600.00	\$ 343,833.60	\$ 229,222.40	\$ 4,154,656.00
1.12	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	96,703	CY		21.00	9.00	\$ -	\$ 2,030,767.20	\$ 870,328.80	\$ 2,901,096.00
1.13	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	145,055	CY		2.40	1.60	\$ -	\$ 348,132	\$ 232,088	\$ 580,219
1.14	Site Grading -Fill for Substation Pad (import, compacted in place)	96,703	CY	25.00	2.40	1.60	\$ 2,417,580	\$ 232,088	\$ 154,725	\$ 2,804,393
1.15	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.16	Install substation 8" pad base	89,540	SY	11.00	6.00	4.00	\$ 984,940	\$ 537,240	\$ 358,160	\$ 1,880,340
1.17	Site Surfacing - Aggregate 6" Thick	89,540	SY	16.50	4.50	3.00	\$ 1,477,410	\$ 402,930	\$ 268,620	\$ 2,148,960
1.18	7' Station Fence w/ Barbed Wire & Grounding	3,886	LF	13.85	13.85	6.92	\$ 53,813	\$ 53,813	\$ 26,907	\$ 134,533
1.19	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.21	Underground Detention Basin	2	EA	579,024.00	521,121.60	347,414.40	\$ 1,158,048	\$ 1,042,243	\$ 694,829	\$ 2,895,120
1.22	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.23	Erosion Control-Silt fence install & remove	5,829	LF	2.41	3.16	0.72	\$ 14,048	\$ 18,420	\$ 4,197	\$ 36,664
1.24	Temporary fencing	3,886	LF	7.50	5.25	2.25	\$ 29,145	\$ 20,402	\$ 8,744	\$ 58,290
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 10,337,697	\$ 34,865,838	\$ 39,497,979	\$ 84,701,514
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, H Frame -SHARED COLUMN (2 BAY)	264	CY	703.89	804.44	502.78	\$ 185,805	\$ 212,348	\$ 132,718	\$ 530,870
2.5	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	597	CY	703.89	804.44	502.78	\$ 420,093	\$ 480,106	\$ 300,066	\$ 1,200,265
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	218	CY	703.89	804.44	502.78	\$ 153,560	\$ 175,497	\$ 109,685	\$ 438,742
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Single-Phase 300/400/500MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	576	CY	703.89	804.44	502.78	\$ 405,438	\$ 463,357	\$ 289,598	\$ 1,158,394
2.24	345kV, GIS Enclosure-BLDG	1,176	CY	703.89	804.44	502.78	\$ 827,769	\$ 946,021	\$ 591,263	\$ 2,365,054
2.25	HVDC VSC Converter Station -DC Equipment foundations		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Converter phase reactor pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Converter enclosure pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station -Control room pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station-Station transformer pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station -Cooling fans pad		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station-AC Switch Yard Equipment foundations		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	HVDC VSC Converter Station- Converter Transformer pad with oil containment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	HVDC VSC Converter Station- DE A frame foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	HVDC VSC Converter Station- Cable sealing end		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.41	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.42	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,302,316	\$ 2,631,219	\$ 1,644,512	\$ 6,578,047
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	3	EA	48,100.00	28,860.00	19,240.00	\$ 144,300	\$ 86,580	\$ 57,720	\$ 288,600
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, H Frame -SHARED COLUMN (2 BAY)	3	EA	42,900.00	25,740.00	17,160.00	\$ 128,700	\$ 77,220	\$ 51,480	\$ 257,400
3.5	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS air terminal-3 Ph	147	EA	8,346.00	5,758.74	3,839.16	\$ 1,226,862	\$ 846,535	\$ 564,357	\$ 2,637,753
3.9	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.16	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Disconnect Switch	0	EA							
3.20	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80	2,568	LF	25.00	184.94	123.29	\$ 64,200	\$ 474,921	\$ 316,614	\$ 855,735
3.23	AL. Bus fittings	1	LS	77,040.00	77,040.00	38,520.00	\$ 77,040	\$ 77,040	\$ 38,520	\$ 192,600
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.26	HVDC VSC Converter Station- DE A frame		EA				\$ -	\$ -	\$ -	\$ -
3.27	HVDC VSC Converter Station- Cable sealing end stand		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,727,682	\$ 1,614,244	\$ 1,063,322	\$ 4,405,248
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	15	EA	856,000.00	513,600.00	342,400.00	\$ 12,840,000	\$ 7,704,000	\$ 5,136,000	\$ 25,680,000
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	18	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 300/400/500MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	112,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.25	HVDC 1200MW Monopoles	3.0	EA	153,000,000.00	51,000,000.00	51,000,000.00	\$ 459,000,000.00	\$ 153,000,000.00	\$ 153,000,000.00	\$ 765,000,000
4.26	HVDC VSC Converter Station -DC transducer	6.0	EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor	18.0	EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans	3.0	EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer	9.0	EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure	3.0	EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure	3.0	EA				\$ -	\$ -	\$ -	\$ -
4.32	345kV Gas-Insulated Bus Conductor (OUTDOOR)	8,235	LF	550.00	275.00	82.50	\$ 4,529,250.00	\$ 2,264,625.00	\$ 679,387.50	\$ 7,473,262.50
4.33	345kV Gas-Insulated Bus Conductor-elbow (OUTDOOR)	57	EA	2,500.00	1,250.00	375.00	\$ 142,500	\$ 71,250	\$ 21,375	\$ 235,125
TOTAL - MAJOR EQUIPMENT							\$ 477,031,750	\$ 163,130,875	\$ 158,875,763	\$ 799,038,388

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	89,750	LF	5.30	1.43	0.29	\$ 475,451	\$ 128,567	\$ 25,713	\$ 629,731
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 475,451	\$ 128,567	\$ 25,713	\$ 629,731
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	14,000	LF	11.15	10.80	5.40	\$ 156,100	\$ 151,200	\$ 75,600	\$ 382,900
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,125	LF	266.50	53.04	13.26	\$ 566,313	\$ 112,710	\$ 28,178	\$ 707,200
6.7	345kV UG Duct Bank- 6 conduits	1,205	FT	333.12	190.65	79.74	\$ 401,405.21	\$ 229,735.59	\$ 96,084.88	\$ 727,225.68
6.8	400kV HVDC UG Duct Bank- 2 conduits	6,638	FT	133.04	63.55	26.58	\$ 883,111.46	\$ 421,849.20	\$ 176,434.69	\$ 1,481,395.36
6.9	Procurement & Installation- 345kV single-core, 2000mm^2 XLPE cable	3,615	FT	154.00	105.00	70.00	\$ 556,710.00	\$ 379,575.00	\$ 253,050.00	\$ 1,189,335.00
6.10	Procurement & Installation- 400kV single-core, 2500mm^2 XLPE cable	6,638	FT	183.00	105.00	70.00	\$ 1,214,754.00	\$ 696,990.00	\$ 464,660.00	\$ 2,376,404.00
6.11	Cable termination- 345kV single-core, 2000mm^2 XLPE cable	9	EA	27,805.00	8,205.40	2,344.40	\$ 250,245.00	\$ 73,848.60	\$ 21,099.60	\$ 345,193.20
6.12	Cable termination- 400kV single-core, 2500mm^2 XLPE cable	12	EA	27,805.00	8,205.40	2,344.40	\$ 333,660.00	\$ 98,464.80	\$ 28,132.80	\$ 460,257.60
6.13	Fiber Optic Cable	7,843	LF	7.40	3.33	2.22	\$ 58,015	\$ 26,122	\$ 17,415	\$ 101,551
6.14	Ground Continuity Conductor	7,843	LF	13.04	7.53	5.02	\$ 102,265	\$ 59,034	\$ 39,356	\$ 200,655
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,522,578	\$ 2,249,529	\$ 1,200,010	\$ 7,972,117
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	88,908	LF	2.09	3.42	1.46	\$ 185,907	\$ 303,647	\$ 130,135	\$ 619,689
7.2	Caweld, DSA, 4/0 , T, CROSS	2,277	EA	165.00	75.00		\$ 375,705	\$ 170,775	\$ -	\$ 546,480
7.3	Ground Rod, 3/4" x 15'	2,176	EA	135.00	67.50	7.50	\$ 293,760	\$ 146,880	\$ 16,320	\$ 456,960
TOTAL - GROUND GRID							\$ 855,372	\$ 621,302	\$ 146,455	\$ 1,623,129
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	1	EA	964,411.37	675,087.96	289,323.41	\$ 964,411	\$ 675,088	\$ 289,323	\$ 1,928,823
8.2	345kV, GIS Enclosure-BLDG	1	EA	2,211,495.05	1,548,046.53	663,448.51	\$ 2,211,495	\$ 1,548,047	\$ 663,449	\$ 4,422,990
8.3	Primary Line Relays (87L): SEL-411L	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.4	Backup Line Relays (87L): GE L90	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	4	EA	12,500.00	10,000.00	2,500.00	\$ 50,000	\$ 40,000	\$ 10,000	\$ 100,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	4	EA	12,500.00	10,000.00	2,500.00	\$ 50,000	\$ 40,000	\$ 10,000	\$ 100,000
8.13	HMI Panel	4	EA	12,500.00	10,000.00	2,500.00	\$ 50,000	\$ 40,000	\$ 10,000	\$ 100,000
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,832,312	\$ 3,678,559	\$ 1,402,753	\$ 9,913,624
3 - Northgate HVDC Converter Station and GIS Substation							\$ 502,085,157	\$ 208,920,133	\$ 203,856,507	\$ 914,861,797
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		3,287,782.39	1,409,049.60	\$ -	\$ 3,287,782	\$ 1,409,050	\$ 4,696,832
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,241,817.97		\$ -	\$ 1,241,818	\$ -	\$ 1,241,818
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		4,967,271.88		\$ -	\$ 4,967,272	\$ -	\$ 4,967,272
9.4	Utility PM and Project Oversite	1.00	LS		1,241,817.97		\$ -	\$ 1,241,818	\$ -	\$ 1,241,818
9.5	Site Accommodation, Facilities, Storage	1.00	LS			1,241,817.97	\$ -	\$ -	\$ 1,241,818	\$ 1,241,818
	Engineering									
9.6	Design Engineering	1.00	LS		9,934,543.76		\$ -	\$ 9,934,544	\$ -	\$ 9,934,544
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		869,272.58		\$ -	\$ 869,273	\$ -	\$ 869,273
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,656,817.39		\$ -	\$ 4,656,817	\$ -	\$ 4,656,817
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		235,690.56		\$ -	\$ 235,691	\$ -	\$ 235,691
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,241,817.97		\$ -	\$ 1,241,818	\$ -	\$ 1,241,818
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		372,545.39		\$ -	\$ 372,545	\$ -	\$ 372,545
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,418,808.00	\$ -	\$ -	\$ 1,418,808	\$ 1,418,808

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.17	Legal Fees (Real estate)	1.00	LS		-	42,564.24	\$ -	\$ -	\$ 42,564	\$ 42,564
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 26,560,000	\$ -	\$ -	\$ 26,560,000	\$ 26,560,000
9.20	Sales Tax on Materials	8.80%	LS	502,085,157.19			\$ 44,183,494	\$ -	\$ -	\$ 44,183,494
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		914,861.80		\$ -	\$ 914,862	\$ -	\$ 914,862
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 44,183,494	\$ 28,977,890	\$ 30,681,340	\$ 103,842,723

LS Power - T035

4 - Millwood Interconnection

Total: \$ 541,900

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
4 - Millwood Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT CABLE TRENCH AND OH INTERCONNECTIONS	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,261	\$ 97,661	\$ 17,838	\$ 126,760
SUBTOTAL (Costs):	\$ 139,230	\$ 200,036	\$ 43,432	\$ 382,698
CONTRACTOR MARK-UP (OH&P)	\$ 25,061	\$ 36,006	\$ 7,818	\$ 68,886
SUBTOTAL:	\$ 164,291	\$ 236,042	\$ 51,250	\$ 451,583
CONTINGENCY ON ENTIRE PROJECT	\$ 32,858	\$ 47,208	\$ 10,250	\$ 90,317
TOTAL:	\$ 197,150	\$ 283,250	\$ 61,500	\$ 541,900

Description of Work: Interconnection										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - Millwood Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	21,000.00	14,000.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	75,000.00	45,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	45,000.00	27,000.00	18,000.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (Dead-tank)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, H Frame H Frame -Single Bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, H Frame H Frame -SHARED COLUMN (2 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	4,896.84	4,896.84	2,448.42	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, H Frame H Frame -Single Bay	0	EA	19,305.00	11,583.00	7,722.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, H Frame H Frame -SHARED COLUMN (2 BAY)	0	EA	32,175.00	19,305.00	12,870.00	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings		LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	16,900.00	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA	4,420,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		834,400.00	357,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,901,774.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		384,650.00	164,850.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA	16,086,712.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker (Dead-tank)	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	0	EA	11,600.00	1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	0	LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT CABLE TRENCH AND OH INTERCONNECTIONS										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	41.00	30.00	16.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	125.00	75.00	50.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	5,664.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	Fiber Optic Cable		LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.12	Ground Continuity Conductor		LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE I90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
4 - Millwood Interconnection							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		4,478.90	1,919.53	\$ -	\$ 4,479	\$ 1,920	\$ 6,398
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		5,118.75		\$ -	\$ 5,119	\$ -	\$ 5,119
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		20,474.99		\$ -	\$ 20,475	\$ -	\$ 20,475
9.4	Utility PM and Project Oversight	1.00	LS		5,118.75		\$ -	\$ 5,119	\$ -	\$ 5,119
9.5	Site Accommodation, Facilities, Storage	1.00	LS			5,118.75	\$ -	\$ -	\$ 5,119	\$ 5,119
	Engineering									
9.6	Design Engineering	1.00	LS		40,949.98		\$ -	\$ 40,950	\$ -	\$ 40,950
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		1,791.56		\$ -	\$ 1,792	\$ -	\$ 1,792
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		9,597.65		\$ -	\$ 9,598	\$ -	\$ 9,598
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		2,559.37		\$ -	\$ 2,559	\$ -	\$ 2,559
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		767.81		\$ -	\$ 768	\$ -	\$ 768
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 10,800	\$ -	\$ -	\$ 10,800	\$ 10,800
9.20	Sales Tax on Materials	8.80%	LS	127,968.69			\$ 11,261	\$ -	\$ -	\$ 11,261
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		255.94		\$ -	\$ 256	\$ -	\$ 256
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,261	\$ 97,661	\$ 17,838	\$ 126,760

LS Power - T035

5 - Barrett Interconnection

Total: \$ -

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Barrett Interconnection (Cost not included)				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ -	\$ -	\$ -	\$ -
SUBTOTAL (Costs):	\$ -	\$ -	\$ -	\$ -
CONTRACTOR MARK-UP (OH&P)	\$ -	\$ -	\$ -	\$ -
SUBTOTAL:	\$ -	\$ -	\$ -	\$ -
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ -
TOTAL:	\$ -	\$ -	\$ -	\$ -

Description of Work: Interconnection										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Barrett Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, Shunt Reactor with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	138kV, Phase Angle Regulator	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast- 90'	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.5	345kV, CCVT	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.6	138kV, Disconnect Switch-3 Ph	0	EA	12,251.20	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.7	138kV, Cable sealing end-3 Ph	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.8	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.9	AL. Bus fittings		LS	18,330.00	18,330.00	9,165.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345/138kV, Power Transformer	0	EA	4,420,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.2	Transport & Testing- Transformer	0	EA		834,400.00	357,600.00	\$ -	\$ -	\$ -	\$ -
4.3	Shunt Reactor, 345kV	0	EA	2,385,863.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.4	Transport & Testing- Shunt Reactor	0	EA		323,400.00	138,600.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV Circuit Breakers, PASS	0	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, CCVT	0	EA	16,900.00	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Surge arrester	0	EA	8,450.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.9	Phase Angle Regulating Transformer, 138kV	0	EA	10,713,172.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.11	138kV, Cable sealing end	0	EA	11,600.00	1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.12	138kV, Disconnect Switch- 3 Phase	0	EA	12,566.67	3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.13	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.14	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg		EA	190,880.15	133,616.11	57,264.05	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
5 - Barrett Interconnection							\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob		LS		-	-	\$ -	\$ -	\$ -	\$ -
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)		MO		67,600.00		\$ -	\$ -	\$ -	\$ -
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)		MO		54,340.00		\$ -	\$ -	\$ -	\$ -
9.4	Utility PM and Project Oversight		MO		34,666.67		\$ -	\$ -	\$ -	\$ -
9.5	Site Accommodation, Facilities, Storage		MO	18,000.00			\$ -	\$ -	\$ -	\$ -
	Engineering									
9.6	Design Engineering		LS		-		\$ -	\$ -	\$ -	\$ -
9.7	LiDAR /GPR		LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech		EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking		Site		-		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment		LS		-		\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
9.11	Physical Security		LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost		LS		-		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's		LS		-		\$ -	\$ -	\$ -	\$ -
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	-	LS		-	\$ -	\$ -	\$ -	\$ -	\$ -
9.20	Sales Tax on Materials		LS	-			\$ -	\$ -	\$ -	\$ -
9.21	Fees for permits, including roadway, railroad, building or other local permits		LS		-		\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ -	\$ -	\$ -	\$ -

LS Power - T035

6 - Ruland Road Substation Interconnection

Total: \$ 13,117,359

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
6 - Ruland Road Substation_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 175,525	\$ 249,880	\$ 146,255	\$ 571,661
2. SUBSTATION FOUNDATIONS	\$ 487,171	\$ 556,766	\$ 347,979	\$ 1,391,916
3. SUBSTATION STRUCTURES	\$ 415,447	\$ 815,675	\$ 519,379	\$ 1,750,501
4. MAJOR EQUIPMENT	\$ 1,550,400	\$ 223,860	\$ 95,940	\$ 1,870,200
5. LOW VOLTAGE & CONTROL CABLE	\$ 162,104	\$ 43,835	\$ 8,767	\$ 214,705
6. CONDUIT & CABLE TRENCH	\$ 452,683	\$ 244,236	\$ 110,849	\$ 807,767
7. GROUND GRID	\$ 26,574	\$ 19,053	\$ 4,373	\$ 50,000
8. CONTROL ENCLOSURE	\$ 341,250	\$ 273,000	\$ 68,250	\$ 682,500
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 86,470	\$ 1,489,334	\$ 348,618	\$ 1,924,421
SUBTOTAL (Costs):	\$ 3,697,623	\$ 3,915,638	\$ 1,650,410	\$ 9,263,671
CONTRACTOR MARK-UP (OH&P)	\$ 665,572	\$ 704,815	\$ 297,074	\$ 1,667,461
SUBTOTAL:	\$ 4,363,195	\$ 4,620,453	\$ 1,947,484	\$ 10,931,132
CONTINGENCY ON ENTIRE PROJECT	\$ 872,639	\$ 924,091	\$ 389,497	\$ 2,186,226
TOTAL:	\$ 5,235,834	\$ 5,544,544	\$ 2,336,981	\$ 13,117,359

Description of Work: Construct two new 138kv bays and Interconneciton										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Ruland Road Substation_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.6	ACRE	-	21,000.00	14,000.00	\$ -	\$ 12,600	\$ 8,400	\$ 21,000
1.2	Demolition	1	LS	-	75,000.00	45,000.00	\$ -	\$ 75,000	\$ 45,000	\$ 120,000
1.3	New Access Road - 20'	667	SY	4.85	7.20	4.80	\$ 3,233	\$ 4,800	\$ 3,200	\$ 11,233
1.4	Strip and Dispose Top Soil	968	CY		24.50	10.50	\$ -	\$ 23,716	\$ 10,164	\$ 33,880
1.5	Site Grading- Excavation for Substation Pad	2,904	CY		9.00	6.00	\$ -	\$ 26,136	\$ 17,424	\$ 43,560
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,568	CY		21.00	9.00	\$ -	\$ 32,931.36	\$ 14,113.44	\$ 47,045
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,352	CY		2.40	1.60	\$ -	\$ 5,645	\$ 3,764	\$ 9,409
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,568	CY	25.00	2.40	1.60	\$ 39,204	\$ 3,764	\$ 2,509	\$ 45,477
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	2,904	SY	11.00	6.00	4.00	\$ 31,944	\$ 17,424	\$ 11,616	\$ 60,984
1.11	Site Surfacing - Aggregate 6" Thick	2,904	SY	16.50	4.50	3.00	\$ 47,916	\$ 13,068	\$ 8,712	\$ 69,696
1.12	7' Station Fence w/ Barbed Wire & Grounding	320	LF	13.85	13.85	6.92	\$ 4,431	\$ 4,431	\$ 2,216	\$ 11,078
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	45,000.00	27,000.00	18,000.00	\$ 45,000	\$ 27,000	\$ 18,000	\$ 90,000
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	480	LF	2.41	3.16	0.72	\$ 1,157	\$ 1,517	\$ 346	\$ 3,019
1.18	Temporary fencing	352	LF	7.50	5.25	2.25	\$ 2,640	\$ 1,848	\$ 792	\$ 5,280
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 175,525	\$ 249,880	\$ 146,255	\$ 571,661
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (Dead-tank)	27	CY	703.89	804.44	502.78	\$ 18,770	\$ 21,452	\$ 13,407	\$ 53,629
2.22	138kV, Bus support-3 Ph, low	150	CY	703.89	804.44	502.78	\$ 105,442	\$ 120,505	\$ 75,316	\$ 301,263
2.23	138kV, Bus support-1 Ph, low	97	CY	703.89	804.44	502.78	\$ 68,587	\$ 78,385	\$ 48,990	\$ 195,962
2.24	138kV, Disconnect Switch	291	CY	703.89	804.44	502.78	\$ 204,746	\$ 233,996	\$ 146,247	\$ 584,989
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, H Frame H Frame -Single Bay	73	CY	703.89	804.44	502.78	\$ 51,215	\$ 58,531	\$ 36,582	\$ 146,328
2.29	138kV, H Frame H Frame -SHARED COLUMN (2 BAY)	55	CY	703.89	804.44	502.78	\$ 38,411	\$ 43,898	\$ 27,436	\$ 109,746
2.30	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 487,171	\$ 556,766	\$ 347,979	\$ 1,391,916
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	-	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	-	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	-	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	14	EA	4,173.00	2,879.76	1,919.84	\$ 58,422	\$ 40,317	\$ 26,878	\$ 125,616
3.14	138kV, Bus support-1 Ph, low	24	EA	2,782.00	1,919.84	1,279.89	\$ 66,768	\$ 46,076	\$ 30,717	\$ 143,562
3.15	138kV, Disconnect Switch	12	EA	4,896.84	4,896.84	2,448.42	\$ 58,762	\$ 58,762	\$ 29,381	\$ 146,905
3.16	138kV, Cable sealing end	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	-	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	-	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, H Frame H Frame -Single Bay	2	EA	19,305.00	11,583.00	7,722.00	\$ 38,610	\$ 23,166	\$ 15,444	\$ 77,220
3.20	138kV, H Frame H Frame -SHARED COLUMN (2 BAY)	1	EA	32,175.00	19,305.00	12,870.00	\$ 32,175	\$ 19,305	\$ 12,870	\$ 64,350
3.21	345kV Gas-Insulated Bus Conductor	-	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow	-	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	2,922	LF	25.00	184.94	123.29	\$ 73,050	\$ 540,389	\$ 360,259	\$ 973,698
3.24	AL. Bus fittings	1	LS	87,660.00	87,660.00	43,830.00	\$ 87,660	\$ 87,660	\$ 43,830	\$ 219,150

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 415,447	\$ 815,675	\$ 519,379	\$ 1,750,501
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	-	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	-	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	-	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	-	EA	16,900.00	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	-	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	-	EA	4,420,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	-	EA		834,400.00	357,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	-	EA	2,901,774.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	-	EA		384,650.00	164,850.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	-	EA	16,086,712.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Phase Angle Regulating Transformer, 345kV	-	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	-	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	-	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	-	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	-	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker (Dead-tank)	6	EA	183,000.00	13,559.00	5,811.00	\$ 1,098,000	\$ 81,354	\$ 34,866	\$ 1,214,220
4.20	138kV, Disconnect Switch	12	EA	37,700.00	11,875.50	5,089.50	\$ 452,400	\$ 142,506	\$ 61,074	\$ 655,980
4.21	138kV, Cable sealing end	-	EA	11,600.00	1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, CCVT	-	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	-	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	-	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,550,400	\$ 223,860	\$ 95,940	\$ 1,870,200
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	30,600	LF	5.30	1.43	0.29	\$ 162,104	\$ 43,835	\$ 8,767	\$ 214,705
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 162,104	\$ 43,835	\$ 8,767	\$ 214,705
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,400	LF	11.15	10.80	5.40	\$ 60,210	\$ 58,320	\$ 29,160	\$ 147,690
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	838	LF	266.50	53.04	13.26	\$ 223,194	\$ 44,421	\$ 11,105	\$ 278,720
6.7										
6.8	138kV UG- Conduit	310	LF	41.00	30.00	16.00	\$ 12,710	\$ 9,300	\$ 4,960	\$ 26,970
6.9	138kV UG- Cable	930	LF	125.00	75.00	50.00	\$ 116,250	\$ 69,750	\$ 46,500	\$ 232,500
6.10	138kV UG- Termination	6	EA	5,664.00	9,846.48	2,813.28	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
6.11	Fiber Optic Cable	310	LF	7.40	3.33	2.22	\$ 2,293	\$ 1,032	\$ 688	\$ 4,014
6.12	Ground Continuity Conductor	310	LF	13.04	7.53	5.02	\$ 4,042	\$ 2,333	\$ 1,556	\$ 7,931
TOTAL - CONDUIT & CABLE TRENCH							\$ 452,683	\$ 244,236	\$ 110,849	\$ 807,767
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,680	LF	2.09	3.42	1.46	\$ 5,604	\$ 9,153	\$ 3,923	\$ 18,680
7.2	Caweld, DSA, 4/0 , T, CROSS	78	EA	165.00	75.00		\$ 12,870	\$ 5,850	\$ -	\$ 18,720
7.3	Ground Rod, 3/4" x 15'	60	EA	135.00	67.50	7.50	\$ 8,100	\$ 4,050	\$ 450	\$ 12,600
TOTAL - GROUND GRID							\$ 26,574	\$ 19,053	\$ 4,373	\$ 50,000
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg		EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.9	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 341,250	\$ 273,000	\$ 68,250	\$ 682,500
6 - Ruland Road Substation_Interconnection							\$ 982,610	\$ 580,123	\$ 192,238	\$ 7,339,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		27,032.65	11,585.42	\$ -	\$ 27,033	\$ 11,585	\$ 38,618
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		73,392.50		\$ -	\$ 73,393	\$ -	\$ 73,393
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		293,570.00		\$ -	\$ 293,570	\$ -	\$ 293,570
9.4	Utility PM and Project Oversight	1.00	LS		73,392.50		\$ -	\$ 73,393	\$ -	\$ 73,393
9.5	Site Accommodation, Facilities, Storage	1.00	LS			73,392.50	\$ -	\$ -	\$ 73,393	\$ 73,393
	Engineering									
9.6	Design Engineering	1.00	LS		587,140.01		\$ -	\$ 587,140	\$ -	\$ 587,140
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		51,374.75		\$ -	\$ 51,375	\$ -	\$ 51,375
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		275,221.88		\$ -	\$ 275,222	\$ -	\$ 275,222
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		73,392.50		\$ -	\$ 73,393	\$ -	\$ 73,393
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,017.75		\$ -	\$ 22,018	\$ -	\$ 22,018
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	982,610.13			\$ 86,470	\$ -	\$ -	\$ 86,470
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,339.25		\$ -	\$ 7,339	\$ -	\$ 7,339
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 86,470	\$ 1,489,334	\$ 348,618	\$ 1,924,421

LS Power - T035

7 - Pleasant Valley Substation Interconnection

Total: \$ 1,001,140

LS Power - T035					
	Material Supply	Labor Supply	Equip Supply	Total	
7 - Pleasant Valley Substation Interconnection					
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -	
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -	
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -	
4. MAJOR EQUIPTMENT	\$ -	\$ -	\$ -	\$ -	
5. LOW VOLTAGE & CONTROL CABLE	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413	
6. CONDUIT & CABLE TRENCH	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750	
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -	
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625	
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 24,068	\$ 167,369	\$ 32,795	\$ 224,232	
SUBTOTAL (Costs):	\$ 297,568	\$ 325,432	\$ 84,020	\$ 707,020	
CONTRACTOR MARK-UP (OH&P)	\$ 53,562	\$ 58,578	\$ 15,124	\$ 127,264	
SUBTOTAL:	\$ 351,130	\$ 384,009	\$ 99,144	\$ 834,283	
CONTINGENCY ON ENTIRE PROJECT	\$ 70,226	\$ 76,802	\$ 19,829	\$ 166,857	
TOTAL:	\$ 421,356	\$ 460,811	\$ 118,972	\$ 1,001,140	

Description of Work: Interconneciton										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - Pleasant Valley Substation_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	3,000.00	2,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	40' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines		LS	89,529.60	38,400.00	18,120.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, IPO circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-18"X40'		EA	12,000.00	2,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	-	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	-	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	-	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	-	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	-	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	-	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	-	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	-	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	-	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor	-	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor-elbow	-	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus fittings		LS	30,570.00	30,570.00	15,285.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	-	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	-	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	-	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, GIS Cable sealing end	-	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	-	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	-	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	-	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.8	345/138kV, Power Transformer with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	-	EA	2,385,863.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	-	EA		323,400.00	138,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	-	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	-	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	-	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	-	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	-	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	-	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	-	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	-	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	-	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	-	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	-	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	-	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	25,000	LF	5.30	1.43	0.29	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,000	LF	11.15	10.80	5.40	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	-	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	-	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	-	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	-	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	-	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	125VDC Battery System	-	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.5	Control house AC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.6	Control House DC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Generator	-	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
7 - Pleasant Valley Substation_ Interconnection							\$ 273,500	\$ 158,062	\$ 51,225	\$ 482,787
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		7,325.06	3,139.31	\$ -	\$ 7,325	\$ 3,139	\$ 10,464
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		9,655.75		\$ -	\$ 9,656	\$ -	\$ 9,656
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		38,622.99		\$ -	\$ 38,623	\$ -	\$ 38,623
9.4	Utility PM and Project Oversight	1.00	LS		9,655.75		\$ -	\$ 9,656	\$ -	\$ 9,656
9.5	Site Accommodation, Facilities, Storage	1.00	LS			9,655.75	\$ -	\$ -	\$ 9,656	\$ 9,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Engineering									
9.6	Design Engineering	1.00	LS		77,245.99		\$ -	\$ 77,246	\$ -	\$ 77,246
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		3,379.51		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		18,104.53		\$ -	\$ 18,105	\$ -	\$ 18,105
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		4,827.87		\$ -	\$ 4,828	\$ -	\$ 4,828
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,448.36		\$ -	\$ 1,448	\$ -	\$ 1,448
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 20,000	\$ -	\$ -	\$ 20,000	\$ 20,000
9.20	Sales Tax on Materials	8.80%	LS	273,499.96			\$ 24,068	\$ -	\$ -	\$ 24,068
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		482.79		\$ -	\$ 483	\$ -	\$ 483
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 24,068	\$ 167,369	\$ 32,795	\$ 224,232

LS Power - T035

8 - Buchanan Substation Interconnection

Total: \$ 1,001,140

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
8 - Buchanan Substation_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 24,068	\$ 167,369	\$ 32,795	\$ 224,232
SUBTOTAL (Costs):	\$ 297,568	\$ 325,432	\$ 84,020	\$ 707,020
CONTRACTOR MARK-UP (OH&P)	\$ 53,562	\$ 58,578	\$ 15,124	\$ 127,264
SUBTOTAL:	\$ 351,130	\$ 384,009	\$ 99,144	\$ 834,283
CONTINGENCY ON ENTIRE PROJECT	\$ 70,226	\$ 76,802	\$ 19,829	\$ 166,857
TOTAL:	\$ 421,356	\$ 460,811	\$ 118,972	\$ 1,001,140

Description of Work: Interconneciton										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 - Buchanan Substation_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	3,000.00	2,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	40' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines		LS	89,529.60	38,400.00	18,120.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, IPO circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-18"X40'		EA	12,000.00	2,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	-	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	-	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	-	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	-	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	-	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	-	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	-	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	-	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	-	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor	-	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor-elbow	-	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus fittings		LS	30,570.00	30,570.00	15,285.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	-	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	-	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	-	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	-	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	-	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	-	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	-	EA	22,966.67	7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	-	EA	2,385,863.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	-	EA		323,400.00	138,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	-	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	-	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	-	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	-	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	-	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	-	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	-	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	-	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	-	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	-	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	-	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	-	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	25,000	LF	5.30	1.43	0.29	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,000	LF	11.15	10.80	5.40	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	-	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	-	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	-	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	-	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	-	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	125VDC Battery System	-	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.5	Control house AC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.6	Control House DC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Generator	-	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8 - Buchanan Substation_ Interconnection							\$ 273,500	\$ 158,062	\$ 51,225	\$ 482,787
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		7,325.06	3,139.31	\$ -	\$ 7,325	\$ 3,139	\$ 10,464

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		9,655.75		\$ -	\$ 9,656	\$ -	\$ 9,656
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		38,622.99		\$ -	\$ 38,623	\$ -	\$ 38,623
9.4	Utility PM and Project Oversight	1.00	LS		9,655.75		\$ -	\$ 9,656	\$ -	\$ 9,656
9.5	Site Accommodation, Facilities, Storage	1.00	LS			9,655.75	\$ -	\$ -	\$ 9,656	\$ 9,656
	Engineering									
9.6	Design Engineering	1.00	LS		77,245.99		\$ -	\$ 77,246	\$ -	\$ 77,246
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		3,379.51		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		18,104.53		\$ -	\$ 18,105	\$ -	\$ 18,105
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		4,827.87		\$ -	\$ 4,828	\$ -	\$ 4,828
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,448.36		\$ -	\$ 1,448	\$ -	\$ 1,448
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 20,000	\$ -	\$ -	\$ 20,000	\$ 20,000
9.20	Sales Tax on Materials	8.80%	LS	273,499.96			\$ 24,068	\$ -	\$ -	\$ 24,068
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		482.79		\$ -	\$ 483	\$ -	\$ 483
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 24,068	\$ 167,369	\$ 32,795	\$ 224,232

LS Power - T035

9 - Pilgrim Road Substation Interconnection

Total: \$ 26,904,970

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
9 - Pilgrim Road Substation_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ 27,500	\$ 107,469	\$ 69,146	\$ 204,115
4. MAJOR EQUIPMENT	\$ 11,977,578	\$ 630,671	\$ 409,659	\$ 13,017,908
5. LOW VOLTAGE & CONTROL CABLE	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,088,022	\$ 2,823,300	\$ 713,928	\$ 4,625,250
SUBTOTAL (Costs):	\$ 13,451,913	\$ 4,087,752	\$ 1,461,020	\$ 19,000,685
CONTRACTOR MARK-UP (OH&P)	\$ 2,421,344	\$ 735,795	\$ 262,984	\$ 3,420,123
SUBTOTAL:	\$ 15,873,257	\$ 4,823,548	\$ 1,724,004	\$ 22,420,808
CONTINGENCY ON ENTIRE PROJECT	\$ 3,174,651	\$ 964,710	\$ 344,801	\$ 4,484,162
TOTAL:	\$ 19,047,908	\$ 5,788,257	\$ 2,068,804	\$ 26,904,970

Description of Work: Interconneciton										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 - Pilgrim Road Substation_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	40' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines		LS	89,529.60	38,400.00	18,120.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 300,000	\$ 200,000	\$ 500,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, IPO circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-18"X40'		EA	12,000.00	2,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	-	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	-	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	-	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	-	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	-	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	-	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	-	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	-	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	-	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor	-	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor-elbow	-	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80	500	LF	25.00	184.94	123.29	\$ 12,500	\$ 92,469	\$ 61,646	\$ 166,615
3.25	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 27,500	\$ 107,469	\$ 69,146	\$ 204,115
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	-	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	-	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	-	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	-	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	-	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	-	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	-	EA	22,966.67	7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	-	EA	2,385,863.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	-	EA		323,400.00	138,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	-	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	-	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	-	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	-	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	-	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	-	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	1	EA	\$ 11,902,178	\$ 3,520	\$ 880	\$ 11,902,178	\$ 3,520	\$ 880	\$ 11,906,578
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.21	138kV, Circuit Breaker (PASS)	-	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.23	138kV, Cable sealing end	-	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	-	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	-	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	-	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 11,977,578	\$ 630,671	\$ 409,659	\$ 13,017,908
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	25,000	LF	5.30	1.43	0.29	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,000	LF	11.15	10.80	5.40	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	-	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	-	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	-	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	-	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	-	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	125VDC Battery System	-	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.9	Control house AC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Control House DC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Generator	-	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 - Pilgrim Road Substation_ Interconnection							\$ 12,363,890	\$ 1,264,452	\$ 747,092	\$ 14,375,435
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		70,404.07	30,173.17	\$ -	\$ 70,404	\$ 30,173	\$ 100,577
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		143,754.35		\$ -	\$ 143,754	\$ -	\$ 143,754
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		575,017.41		\$ -	\$ 575,017	\$ -	\$ 575,017
9.4	Utility PM and Project Oversight	1.00	LS		143,754.35		\$ -	\$ 143,754	\$ -	\$ 143,754
9.5	Site Accommodation, Facilities, Storage	1.00	LS			143,754.35	\$ -	\$ -	\$ 143,754	\$ 143,754
	Engineering									
9.6	Design Engineering	1.00	LS		1,150,034.83		\$ -	\$ 1,150,035	\$ -	\$ 1,150,035
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		100,628.05		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		539,078.83		\$ -	\$ 539,079	\$ -	\$ 539,079
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		143,754.35		\$ -	\$ 143,754	\$ -	\$ 143,754
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		43,126.31		\$ -	\$ 43,126	\$ -	\$ 43,126
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 540,000	\$ -	\$ -	\$ 540,000	\$ 540,000
9.20	Sales Tax on Materials	8.80%	LS	12,363,890.42			\$ 1,088,022	\$ -	\$ -	\$ 1,088,022
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		14,375.44		\$ -	\$ 14,375	\$ -	\$ 14,375
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,088,022	\$ 2,823,300	\$ 713,928	\$ 4,625,250

LS Power - T035

10 - Freeport Substation Interconnection

Total: \$ 1,001,140

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
10 - Freeport Substation_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 24,068	\$ 167,369	\$ 32,795	\$ 224,232
SUBTOTAL (Costs):	\$ 297,568	\$ 325,432	\$ 84,020	\$ 707,020
CONTRACTOR MARK-UP (OH&P)	\$ 53,562	\$ 58,578	\$ 15,124	\$ 127,264
SUBTOTAL:	\$ 351,130	\$ 384,009	\$ 99,144	\$ 834,283
CONTINGENCY ON ENTIRE PROJECT	\$ 70,226	\$ 76,802	\$ 19,829	\$ 166,857
TOTAL:	\$ 421,356	\$ 460,811	\$ 118,972	\$ 1,001,140

Description of Work: Interconneciton										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10 - Freeport Substation_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	3,000.00	2,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	40' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines		LS	89,529.60	38,400.00	18,120.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, IPO circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-18"X40'		EA	12,000.00	2,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	-	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	-	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	-	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end - 3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch - 3Ph	-	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	-	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	-	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch-3 Ph	-	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	-	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	-	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor	-	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor-elbow	-	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus fittings		LS	-	-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	-	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	-	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	-	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	-	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end - 3 Ph	-	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	-	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	-	EA	22,966.67	7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	-	EA	2,385,863.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	-	EA		323,400.00	138,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	-	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	-	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	-	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	-	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	-	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	-	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	-	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch-3 Ph	-	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end-3 Ph	-	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	-	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	-	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	25,000	LF	5.30	1.43	0.29	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,000	LF	11.15	10.80	5.40	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	-	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	-	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	-	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	-	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	-	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	125VDC Battery System	-	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.5	Control house AC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.6	Control House DC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Generator	-	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10 - Freeport Substation_ Interconnection							\$ 273,500	\$ 158,062	\$ 51,225	\$ 482,787
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		7,325.06	3,139.31	\$ -	\$ 7,325	\$ 3,139	\$ 10,464

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		9,655.75		\$ -	\$ 9,656	\$ -	\$ 9,656
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		38,622.99		\$ -	\$ 38,623	\$ -	\$ 38,623
9.4	Utility PM and Project Oversight	1.00	LS		9,655.75		\$ -	\$ 9,656	\$ -	\$ 9,656
9.5	Site Accommodation, Facilities, Storage	1.00	LS			9,655.75	\$ -	\$ -	\$ 9,656	\$ 9,656
	Engineering									
9.6	Design Engineering	1.00	LS		77,245.99		\$ -	\$ 77,246	\$ -	\$ 77,246
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		3,379.51		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		18,104.53		\$ -	\$ 18,105	\$ -	\$ 18,105
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		4,827.87		\$ -	\$ 4,828	\$ -	\$ 4,828
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,448.36		\$ -	\$ 1,448	\$ -	\$ 1,448
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 20,000	\$ -	\$ -	\$ 20,000	\$ 20,000
9.20	Sales Tax on Materials	8.80%	LS	273,499.96			\$ 24,068	\$ -	\$ -	\$ 24,068
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		482.79		\$ -	\$ 483	\$ -	\$ 483
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 24,068	\$ 167,369	\$ 32,795	\$ 224,232

LS Power - T035

11 - Valley Stream Substation Interconnection

Total: Total: \$ 1,044,031

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
11 - Valley Stream Substation_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 27,822	\$ 106,247	\$ 35,141	\$ 169,210
SUBTOTAL (Costs):	\$ 343,978	\$ 298,435	\$ 94,897	\$ 737,310
CONTRACTOR MARK-UP (OH&P)	\$ 61,916	\$ 53,718	\$ 17,082	\$ 132,716
SUBTOTAL:	\$ 405,894	\$ 352,153	\$ 111,979	\$ 870,026
CONTINGENCY ON ENTIRE PROJECT	\$ 81,179	\$ 70,431	\$ 22,396	\$ 174,005
TOTAL:	\$ 487,073	\$ 422,583	\$ 134,375	\$ 1,044,031

Description of Work: Interconneciton

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11 - Valley Stream Substation_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	3,000.00	2,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	40' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines		LS	89,529.60	38,400.00	18,120.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, IPO circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-18"X40'		EA	12,000.00	2,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	-	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	-	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	-	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end - 3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch - 3Ph	-	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	-	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	-	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch-3 Ph	-	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	-	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	-	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor	-	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor-elbow	-	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus fittings		LS	30,570.00	30,570.00	15,285.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	-	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	-	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	-	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	-	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end - 3 Ph	-	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	-	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	-	EA	22,966.67	7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	-	EA	2,385,863.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	-	EA		323,400.00	138,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	-	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	-	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	-	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	-	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	-	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	-	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	-	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch-3 Ph	-	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end-3 Ph	-	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	-	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	-	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	-	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	25,000	LF	5.30	1.43	0.29	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,000	LF	11.15	10.80	5.40	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	-	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	-	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	-	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	-	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	-	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	-	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	-	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
11 - Valley Stream Substation_ Interconnection							\$ 316,156	\$ 192,187	\$ 59,756	\$ 568,100
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		8,818.03	3,779.16	\$ -	\$ 8,818	\$ 3,779	\$ 12,597
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		11,362.00		\$ -	\$ 11,362	\$ -	\$ 11,362
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		45,447.99		\$ -	\$ 45,448	\$ -	\$ 45,448
9.4	Utility PM and Project Oversight	1.00	LS		11,362.00		\$ -	\$ 11,362	\$ -	\$ 11,362
9.5	Site Accommodation, Facilities, Storage	1.00	LS			11,362.00	\$ -	\$ -	\$ 11,362	\$ 11,362
	Engineering									
9.6	Design Engineering	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		3,976.70		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		21,303.75		\$ -	\$ 21,304	\$ -	\$ 21,304
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		5,681.00		\$ -	\$ 5,681	\$ -	\$ 5,681
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,704.30		\$ -	\$ 1,704	\$ -	\$ 1,704
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 20,000	\$ -	\$ -	\$ 20,000	\$ 20,000
9.20	Sales Tax on Materials	8.80%	LS	316,156.19			\$ 27,822	\$ -	\$ -	\$ 27,822
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		568.10		\$ -	\$ 568	\$ -	\$ 568
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 27,822	\$ 106,247	\$ 35,141	\$ 169,210

LS Power - T035

12 - Empire Offshore Wind Substation Interconnection

Total: \$ 1,175,572

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Empire Offshore Wind Substation_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 27,822	\$ 197,143	\$ 37,141	\$ 262,106
SUBTOTAL (Costs):	\$ 343,978	\$ 389,331	\$ 96,897	\$ 830,206
CONTRACTOR MARK-UP (OH&P)	\$ 61,916	\$ 70,080	\$ 17,442	\$ 149,437
SUBTOTAL:	\$ 405,894	\$ 459,410	\$ 114,339	\$ 979,643
CONTINGENCY ON ENTIRE PROJECT	\$ 81,179	\$ 91,882	\$ 22,868	\$ 195,929
TOTAL:	\$ 487,073	\$ 551,292	\$ 137,207	\$ 1,175,572

Description of Work: Interconneciton										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Empire Offshore Wind Substation_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	3,000.00	2,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	40' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines		LS	89,529.60	38,400.00	18,120.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, IPO circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-18"X40'		EA	12,000.00	2,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	-	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	-	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	-	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end - 3 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch - 3Ph	-	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	-	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	-	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch-3 Ph	-	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	-	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	-	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor	-	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor-elbow	-	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus fittings		LS	30,570.00	30,570.00	15,285.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	-	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	-	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	-	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	-	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end - 3 Ph	-	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	-	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	-	EA	22,966.67	7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	-	EA	2,385,863.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	-	EA		323,400.00	138,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	-	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	-	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	-	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	-	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	-	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	-	EA	8,450.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	-	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch-3 Ph	-	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end-3 Ph	-	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	-	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	-	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	-	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	25,000	LF	5.30	1.43	0.29	\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 132,438	\$ 35,813	\$ 7,163	\$ 175,413
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,000	LF	11.15	10.80	5.40	\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	-	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 55,750	\$ 54,000	\$ 27,000	\$ 136,750
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	-	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	-	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	-	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	-	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	125VDC Battery System	-	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.5	Control house AC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.6	Control House DC Panel	-	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Generator	-	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
12 - Empire Offshore Wind Substation_ Interconnection							\$ 316,156	\$ 192,187	\$ 59,756	\$ 568,100
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		8,818.03	3,779.16	\$ -	\$ 8,818	\$ 3,779	\$ 12,597

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		11,362.00		\$ -	\$ 11,362	\$ -	\$ 11,362
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		45,447.99		\$ -	\$ 45,448	\$ -	\$ 45,448
9.4	Utility PM and Project Oversight	1.00	LS		11,362.00		\$ -	\$ 11,362	\$ -	\$ 11,362
9.5	Site Accommodation, Facilities, Storage	1.00	LS			11,362.00	\$ -	\$ -	\$ 11,362	\$ 11,362
	Engineering									
9.6	Design Engineering	1.00	LS		90,895.98		\$ -	\$ 90,896	\$ -	\$ 90,896
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		3,976.70		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		21,303.75		\$ -	\$ 21,304	\$ -	\$ 21,304
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		5,681.00		\$ -	\$ 5,681	\$ -	\$ 5,681
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,704.30		\$ -	\$ 1,704	\$ -	\$ 1,704
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 22,000	\$ -	\$ -	\$ 22,000	\$ 22,000
9.20	Sales Tax on Materials	8.80%	LS	316,156.19			\$ 27,822	\$ -	\$ -	\$ 27,822
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		568.10		\$ -	\$ 568	\$ -	\$ 568
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 27,822	\$ 197,143	\$ 37,141	\$ 262,106

LS Power - T035

13 - Control Center Upgrade

Total: \$ 107,333

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
13 - Control Center Upgrade				
1. Control Enclosure Upgrade	\$ 26,800	\$ 25,000	\$ 15,000	\$ 66,800
2. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,000	\$ 3,000	\$ 3,000	\$ 9,000
SUBTOTAL (Costs):	\$ 29,800	\$ 28,000	\$ 18,000	\$ 75,800
CONTRACTOR MARK-UP (OH&P)	\$ 5,364	\$ 5,040	\$ 3,240	\$ 13,644
SUBTOTAL:	\$ 35,164	\$ 33,040	\$ 21,240	\$ 89,444
CONTINGENCY ON ENTIRE PROJECT	\$ 7,033	\$ 6,608	\$ 4,248	\$ 17,889
TOTAL:	\$ 42,197	\$ 39,648	\$ 25,488	\$ 107,333

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of two new breakers in series with the existing 345 kV CB -1E and CB-6E respectively, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 - Control Center Upgrade										
1. Control Enclosure Upgrade										
1.1	Control center upgrade	1.0	LS	26,800.00	25,000.00	15,000.00	\$ 26,800	\$ 25,000	\$ 15,000	\$ 66,800
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 26,800	\$ 25,000	\$ 15,000	\$ 66,800
13 - Control Center Upgrade							\$ 26,800	\$ 25,000	\$ 15,000	\$ 66,800
2. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
2.1	Indirect Costs	1.00	LS	3,000.00	3,000.00	3,000.00	\$ 3,000	\$ 3,000	\$ 3,000	\$ 9,000
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,000	\$ 3,000	\$ 3,000	\$ 9,000

LS Power - T035

A Longshore-Southgate 345kV Onshore UG Cables -Three circuits

Total: \$ 985,372,979

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
A Longshore-Southgate 345kV Onshore UG Cables -Three circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,171,776	\$ 25,260,706	\$ 10,218,270	\$ 40,650,752
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 59,710,065	\$ 53,052,218	\$ 38,454,053	\$ 151,216,336
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 183,601,148	\$ 110,655,603	\$ 71,148,389	\$ 365,405,139
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 22,065,289	\$ 83,771,855	\$ 32,775,500	\$ 138,612,644
SUBTOTAL (Costs):	\$ 270,548,279	\$ 272,740,381	\$ 152,596,212	\$ 695,884,872
CONTRACTOR MARK-UP (OH&P)	\$ 48,698,690	\$ 49,093,269	\$ 27,467,318	\$ 125,259,277
SUBTOTAL:	\$ 319,246,969	\$ 321,833,650	\$ 180,063,530	\$ 821,144,149
CONTINGENCY ON ENTIRE PROJECT	\$ 63,849,394	\$ 64,366,730	\$ 36,012,706	\$ 164,228,830
TOTAL:	\$ 383,096,363	\$ 386,200,380	\$ 216,076,236	\$ 985,372,979

Description of Work: 3 new 345kV cables estimated to be 21 miles in length. Conductor size is 4,000 kcmil XLPE UG cable UG cable will be placed n ducts encased in concrete under public roadways. Splice vaults will be placed along the route ot match cable reel lengths estimated at 2,000 ft. Each circuit will be spliced in its own vault to allow maintenance on individual circuits and avoid common contingencies. Grouted casing will be installed via horizontal directional drilling or jack and bore where traditional duct bank cannot be installed (major road/freeway crossings).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
A Longshore-Southgate 345kV Onshore UG Cables -Three circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	21.39	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 14,973,000	\$ 6,417,000	\$ 21,390,000
1.3	Flaggers	580	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 928,000	\$ 2,784,000	\$ 928,000	\$ 4,640,000
1.4	K Rail / Lane Control / Metal Plates	112,939	LF	\$ 30	\$ 18	\$ 12	\$ 3,388,176	\$ 2,032,906	\$ 1,355,270	\$ 6,776,352
1.5	Police Support	23,200.0	HR		\$ 120	\$ 27	\$ -	\$ 2,784,000	\$ 626,400	\$ 3,410,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	21.39	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 855,600	\$ 2,566,800	\$ 855,600	\$ 4,278,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,171,776	\$ 25,260,706	\$ 10,218,270	\$ 40,650,752
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	21.39	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,990,322	\$ 1,993,548	\$ 4,983,870
2.2	Formwork in Trench	867,514	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,735,027	\$ 1,301,270	\$ 433,757	\$ 3,470,054
2.3	Trench Excavation	126,593	CY		\$ 17.5	\$ 7.5	\$ -	\$ 2,215,373	\$ 949,445	\$ 3,164,818
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	7,912	CY	\$ 50	\$ 25	\$ 14	\$ 395,602	\$ 193,845	\$ 110,769	\$ 700,216
2.5	Supply & Install Thermal Backfill	41,538	CY	\$ 350	\$ 245	\$ 105	\$ 14,538,383	\$ 10,176,868	\$ 4,361,515	\$ 29,076,767
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	49,424	CY	\$ 200	\$ 125	\$ 50	\$ 9,884,836	\$ 6,178,022	\$ 2,471,209	\$ 18,534,067
2.9	Conduit 8" HDPE	1,016,453	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 20,877,941	\$ 5,763,287	\$ 2,469,980	\$ 29,111,208
2.10	Conduit 4" HDPE	0	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" HDPE	338,818	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 647,142	\$ 1,067,275	\$ 457,404	\$ 2,171,821
2.12	Warning Tape	225,878	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 33,882	\$ 56,470	\$ 22,588	\$ 112,939
2.13	Trench Box Shoring (Vault)	186	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 3,362,712	\$ 5,044,068	\$ 8,406,780
2.14	Splice Vault Excavation	70,223	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,228,905	\$ 526,674	\$ 1,755,579
2.15	Splice Vault Supply & Installation	186	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 6,510,000	\$ 3,069,000	\$ 7,161,000	\$ 16,740,000
2.16	Splice Vault Backfill	21,067	CY		\$ 14.0	\$ 6.0	\$ -	\$ 294,937	\$ 126,402	\$ 421,339
2.17	Jack and Bore along Route	4,500	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 3,600,000	\$ 7,200,000	\$ 7,200,000	\$ 18,000,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	1,355,270	LF			\$ 0.25	\$ -	\$ -	\$ 338,818	\$ 338,818
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	73,566	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 1,029,920	\$ 1,029,920	\$ 514,960	\$ 2,574,800

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	20,435	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 457,333	\$ 480,200	\$ 205,800	\$ 1,143,334
2.22	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	494	EA		\$ 10	\$ 15	\$ -	\$ 4,942	\$ 7,414	\$ 12,356
2.23	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	415	EA		\$ 400	\$ 1,200	\$ -	\$ 166,153	\$ 498,459	\$ 664,612
2.24	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 478,296	\$ 318,864	\$ -	\$ 478,296	\$ 318,864	\$ 797,160
2.25	Excess Materials Disposal to Certified Backfill	228,474	CY		\$ 24.5	\$ 10.5	\$ -	\$ 5,597,603	\$ 2,398,973	\$ 7,996,576
2.26	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.27	Dewatering	186	EA			\$ 4,000	\$ -	\$ -	\$ 744,000	\$ 744,000
2.28	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Excavated material - stockpile management	196,816	CF		\$ 1.0	\$ 0.5	\$ -	\$ 196,816	\$ 98,408	\$ 295,224
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 59,710,065	\$ 53,052,218	\$ 38,454,053	\$ 151,216,336
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000 kcmil XLPE Cable	355,758	FT	\$ 154	\$ 92	\$ 62	\$ 54,786,806	\$ 32,872,084	\$ 21,914,722	\$ 109,573,612
3.2	Circuit #1- Cable Splicing- 345kV 4000 kcmil XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.3	Circuit #1- Cable Termination- 345kV 4000 kcmil XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000 kcmil XLPE Cable	355,758	FT	\$ 154	\$ 92	\$ 62	\$ 54,786,806	\$ 32,872,084	\$ 21,914,722	\$ 109,573,612
3.5	Circuit #2- Cable Splicing- 345kV 4000 kcmil XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.6	Circuit #2- Cable Termination- 345kV 4000 kcmil XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Circuit #3- Procurement & Installation- 345kV 4000 kcmil XLPE Cable	355,758	FT	\$ 154	\$ 92	\$ 62	\$ 54,786,806	\$ 32,872,084	\$ 21,914,722	\$ 109,573,612
3.8	Circuit #3- Cable Splicing- 345kV 4000 kcmil XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.9	Circuit #3- Cable Termination- 345kV 4000 kcmil XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.10	Link Box & MH racking	186	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 4,929,084	\$ 3,450,359	\$ 1,478,725	\$ 9,858,167
3.11	Fiber Optic Cable	355,758	FT	\$ 7	\$ 3	\$ 2	\$ 2,631,545	\$ 1,184,889	\$ 789,926	\$ 4,606,361
3.12	Ground Continuity Conductor	355,758	FT	\$ 13	\$ 8	\$ 5	\$ 4,638,735	\$ 2,677,794	\$ 1,785,196	\$ 9,101,725
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 183,601,148	\$ 110,655,603	\$ 71,148,389	\$ 365,405,139
A Longshore-Southgate 345kV Onshore UG Cables -Three circuits							\$ 248,482,989	\$ 188,968,527	\$ 119,820,712	\$ 557,272,228
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 9,263,677	\$ 6,175,785	\$ -	\$ 9,263,677	\$ 6,175,785	\$ 15,439,462
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		5,572,722.28		\$ -	\$ 5,572,722	\$ -	\$ 5,572,722
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		22,290,889.11		\$ -	\$ 22,290,889	\$ -	\$ 22,290,889
4.4	Utility PM and Project Oversight	1.00	LS		5,572,722.28		\$ -	\$ 5,572,722	\$ -	\$ 5,572,722
4.5	Site Accommodation, Facilities, Storage	1.00	LS			5,572,722.28	\$ -	\$ -	\$ 5,572,722	\$ 5,572,722
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 27,863,611	\$ -	\$ -	\$ 27,863,611	\$ -	\$ 27,863,611
4.7	LiDAR /GPR	1.0	LS		\$ 1,003,090	\$ 668,727	\$ -	\$ 1,003,090	\$ 668,727	\$ 1,671,817
4.8	Geotech	22.00	EA		2,730.00	1,820.00	\$ -	\$ 60,060	\$ 40,040	\$ 100,100
4.9	Surveying/Staking	1	LS		\$ 2,340,543		\$ -	\$ 2,340,543	\$ -	\$ 2,340,543
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 5,572,722		\$ -	\$ 5,572,722	\$ -	\$ 5,572,722
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 1,671,817		\$ -	\$ 1,671,817	\$ -	\$ 1,671,817
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 59,179	\$ -	\$ -	\$ 59,179	\$ 59,179
9.17	Legal Fees (Real estate)	1.00	LS		-	1,775.37	\$ -	\$ -	\$ 1,775	\$ 1,775
4.17	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 19,700,000	\$ -	\$ -	\$ 19,700,000	\$ 19,700,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 248,482,989.22			\$ 22,065,289	\$ -	\$ -	\$ 22,065,289
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 557,272	\$ -	\$ -	\$ 557,272	\$ 557,272
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 22,065,289	\$ 83,771,855	\$ 32,775,500	\$ 138,612,644

LS Power - T035

B Southgate-Northgate 400kV Onshore UG Cables -Three circuits

Total: \$ 1,413,025,869

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
B Southgate-Northgate 400kV Onshore UG Cables -Three circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 7,106,880	\$ 34,651,928	\$ 14,032,152	\$ 55,790,960
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 125,481,246	\$ 127,514,811	\$ 85,614,554	\$ 338,610,611
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 205,961,859	\$ 121,560,903	\$ 78,256,570	\$ 405,779,332
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 30,063,239	\$ 120,214,164	\$ 47,441,320	\$ 197,718,723
SUBTOTAL (Costs):	\$ 368,613,223	\$ 403,941,807	\$ 225,344,595	\$ 997,899,625
CONTRACTOR MARK-UP (OH&P)	\$ 66,350,380	\$ 72,709,525	\$ 40,562,027	\$ 179,621,932
SUBTOTAL:	\$ 434,963,603	\$ 476,651,332	\$ 265,906,622	\$ 1,177,521,557
CONTINGENCY ON ENTIRE PROJECT	\$ 86,992,721	\$ 95,330,266	\$ 53,181,324	\$ 235,504,311
TOTAL:	\$ 521,956,324	\$ 571,981,598	\$ 319,087,947	\$ 1,413,025,869

Description of Work: Onshore UG section of Southgate-Northgate 400kV transmission line. Total line length is 45 miles, this estimate includes 29 miles of underground line. The UG segments consist of 5,000 kcmil XLPE UG cable placed in ducts encased concrete. Splice vaults will be placed along the route to match cable reel lengths estimated at 2,000ft. Each line will be spliced in its own set of vaults to avoid common contingencies. Grouted casings will be installed via HDD or jack and bore to house the ducts where duct bank cannot be installed (major crossings).										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
B Southgate-Northgate 400kV Onshore UG Cables -Three circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	29.45	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 20,615,000	\$ 8,835,000	\$ 29,450,000
1.3	Flaggers	790	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,264,000	\$ 3,792,000	\$ 1,264,000	\$ 6,320,000
1.4	K Rail / Lane Control / Metal Plates	155,496	LF	\$ 30	\$ 18	\$ 12	\$ 4,664,880	\$ 2,798,928	\$ 1,865,952	\$ 9,329,760
1.5	Police Support	31,600.0	HR		\$ 120	\$ 27	\$ -	\$ 3,792,000	\$ 853,200	\$ 4,645,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	29.45	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 1,178,000	\$ 3,534,000	\$ 1,178,000	\$ 5,890,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 7,106,880	\$ 34,651,928	\$ 14,032,152	\$ 55,790,960
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	29.45	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 4,117,110	\$ 2,744,740	\$ 6,861,850
2.2	Formwork in Trench	1,183,968	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 2,367,936	\$ 1,775,952	\$ 591,984	\$ 4,735,872
2.3	Trench Excavation	216,917	CY		\$ 17.5	\$ 7.5	\$ -	\$ 3,796,047	\$ 1,626,877	\$ 5,422,925
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	19,733	CY	\$ 50	\$ 25	\$ 14	\$ 986,640	\$ 483,454	\$ 276,259	\$ 1,746,353
2.5	Supply & Install Thermal Backfill	134,101	CY	\$ 350	\$ 245	\$ 105	\$ 46,935,287	\$ 32,854,701	\$ 14,080,586	\$ 93,870,574
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	116,259	CY	\$ 200	\$ 125	\$ 50	\$ 23,251,816	\$ 14,532,385	\$ 5,812,954	\$ 43,597,155
2.9	Conduit 10" HDPE	932,976	LF	\$ 37.0	\$ 5.7	\$ 2.4	\$ 34,520,112	\$ 5,289,974	\$ 2,267,132	\$ 42,077,218
2.10	Conduit 4" HDPE	0	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" HDPE	466,488	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 890,992	\$ 1,469,437	\$ 629,759	\$ 2,990,188
2.12	Warning Tape	310,992	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 46,649	\$ 77,748	\$ 31,099	\$ 155,496
2.13	Trench Box Shoring (Vault)	249	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 4,501,695	\$ 6,752,542	\$ 11,254,237
2.14	Splice Vault Excavation	52,286	CY		\$ 17.5	\$ 7.5	\$ -	\$ 915,006	\$ 392,146	\$ 1,307,152
2.15	Splice Vault Supply & Installation	249	EA	\$ 30,000	\$ 16,500	\$ 38,500	\$ 7,470,000	\$ 4,108,500	\$ 9,586,500	\$ 21,165,000
2.16	Splice Vault Backfill	15,686	CY		\$ 14.0	\$ 6.0	\$ -	\$ 219,602	\$ 94,115	\$ 313,716
2.17	Jack and Bore along Route	7,500	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 6,000,000	\$ 12,000,000	\$ 12,000,000	\$ 30,000,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	1,399,464	LF			\$ 0.25	\$ -	\$ -	\$ 349,866	\$ 349,866
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	148,977	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 2,085,675	\$ 2,085,675	\$ 1,042,837	\$ 5,214,187
2.21	PVMT, AGGREGATE, 10", BASE COURSE	41,382	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 926,139	\$ 972,446	\$ 416,763	\$ 2,315,347

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	1,163	EA		\$ 400	\$ 1,200	\$ -	\$ 465,036	\$ 1,395,109	\$ 1,860,145
2.22	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	1,163	EA		\$ 10	\$ 15	\$ -	\$ 11,626	\$ 17,439	\$ 29,065
2.23	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	1,341	EA		\$ 400	\$ 1,200	\$ -	\$ 536,403	\$ 1,609,210	\$ 2,145,613
2.24	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 478,296	\$ 318,864	\$ -	\$ 478,296	\$ 318,864	\$ 797,160
2.25	Excess Materials Disposal to Certified Backfill	329,572	CY		\$ 24.5	\$ 10.5	\$ -	\$ 8,074,524	\$ 3,460,510	\$ 11,535,035
2.26	Rock Excavation and Removal	117,202	CY		\$ 243	\$ 162	\$ -	\$ 28,479,991	\$ 18,986,661	\$ 47,466,651
2.27	Dewatering	249	EA			\$ 4,000	\$ -	\$ -	\$ 996,000	\$ 996,000
2.28	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Excavated material - stockpile management	269,203	CF		\$ 1.0	\$ 0.5	\$ -	\$ 269,203	\$ 134,602	\$ 403,805
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 125,481,246	\$ 127,514,811	\$ 85,614,554	\$ 338,610,611
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 400kV 5000 kcmil XLPE Cable	326,542	FT	\$ 183	\$ 110	\$ 73	\$ 59,757,113	\$ 35,854,268	\$ 23,902,845	\$ 119,514,226
3.2	Circuit #1- Cable Splicing- 400kV 5000 kcmil XLPE Cable	166	EA	\$ 21,837	\$ 9,846	\$ 2,813	\$ 3,624,942	\$ 1,634,516	\$ 467,004	\$ 5,726,462
3.3	Circuit #1- Cable Termination- 400kV 5000 kcmil XLPE Cable	4	EA	\$ 48,323	\$ 9,846	\$ 2,813	\$ 193,292	\$ 39,386	\$ 11,253	\$ 243,931
3.4	Circuit #2- Procurement & Installation- 400kV 5000 kcmil XLPE Cable	326,542	FT	\$ 183	\$ 110	\$ 73	\$ 59,757,113	\$ 35,854,268	\$ 23,902,845	\$ 119,514,226
3.5	Circuit #2- Cable Splicing- 400kV 5000 kcmil XLPE Cable	166	EA	\$ 21,837	\$ 9,846	\$ 2,813	\$ 3,624,942	\$ 1,634,516	\$ 467,004	\$ 5,726,462
3.6	Circuit #2- Cable Termination- 400kV 5000 kcmil XLPE Cable	4	EA	\$ 48,323	\$ 9,846	\$ 2,813	\$ 193,292	\$ 39,386	\$ 11,253	\$ 243,931
3.7	Circuit #3- Procurement & Installation- 400kV 5000 kcmil XLPE Cable	326,542	FT	\$ 183	\$ 110	\$ 73	\$ 59,757,113	\$ 35,854,268	\$ 23,902,845	\$ 119,514,226
3.8	Circuit #3- Cable Splicing- 400kV 5000 kcmil XLPE Cable	166	EA	\$ 21,837	\$ 9,846	\$ 2,813	\$ 3,624,942	\$ 1,634,516	\$ 467,004	\$ 5,726,462
3.9	Circuit #3- Cable Termination- 400kV 5000 kcmil XLPE Cable	4	EA	\$ 48,323	\$ 9,846	\$ 2,813	\$ 193,292	\$ 39,386	\$ 11,253	\$ 243,931
3.10	Link Box & MH racking	249	EA	\$ 20,988	\$ 14,692	\$ 6,296	\$ 5,226,012	\$ 3,658,208	\$ 1,567,804	\$ 10,452,024
3.11	Fiber Optic Cable	489,812	FT	\$ 7	\$ 3	\$ 2	\$ 3,623,142	\$ 1,631,369	\$ 1,087,579	\$ 6,342,091
3.12	Ground Continuity Conductor	489,812	FT	\$ 13	\$ 8	\$ 5	\$ 6,386,664	\$ 3,686,818	\$ 2,457,879	\$ 12,531,360
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 205,961,859	\$ 121,560,903	\$ 78,256,570	\$ 405,779,332
B Southgate-Northgate 400kV Onshore UG Cables -Three circuits							\$ 338,549,984	\$ 283,727,643	\$ 177,903,275	\$ 800,180,902
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 13,848,928	\$ 9,232,618	\$ -	\$ 13,848,928	\$ 9,232,618	\$ 23,081,546
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		8,001,809.02		\$ -	\$ 8,001,809	\$ -	\$ 8,001,809
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		32,007,236.10		\$ -	\$ 32,007,236	\$ -	\$ 32,007,236
4.4	Utility PM and Project Oversite	1.00	LS		8,001,809.02		\$ -	\$ 8,001,809	\$ -	\$ 8,001,809
4.5	Site Accommodation, Facilities, Storage	1.00	LS			8,001,809.02	\$ -	\$ -	\$ 8,001,809	\$ 8,001,809
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 40,009,045	\$ -	\$ -	\$ 40,009,045	\$ -	\$ 40,009,045
4.7	LiDAR /GPR	1.0	LS		\$ 1,440,326	\$ 960,217	\$ -	\$ 1,440,326	\$ 960,217	\$ 2,400,543
4.8	Geotech	30.0	Location		2,730.00	1,820.00	\$ -	\$ 81,900	\$ 54,600	\$ 136,500
4.9	Surveying/Staking	1	LS		\$ 3,360,760		\$ -	\$ 3,360,760	\$ -	\$ 3,360,760
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 8,001,809		\$ -	\$ 8,001,809	\$ -	\$ 8,001,809
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 2,400,543		\$ -	\$ 2,400,543	\$ -	\$ 2,400,543
4.14	Laydown Lease & temporary easement	1	LS		\$ 3,000,000		\$ -	\$ 3,000,000	\$ -	\$ 3,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 128,053	\$ -	\$ -	\$ 128,053	\$ 128,053
9.17	Legal Fees (Real estate)	1.00	LS		-	3,841.59	\$ -	\$ -	\$ 3,842	\$ 3,842
4.17	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 28,260,000	\$ -	\$ -	\$ 28,260,000	\$ 28,260,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 338,549,984.31			\$ 30,063,239	\$ -	\$ -	\$ 30,063,239
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 800,181	\$ -	\$ -	\$ 800,181	\$ 800,181
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 30,063,239	\$ 120,214,164	\$ 47,441,320	\$ 197,718,723

LS Power - T035

C. Southgate to Northgate Offshore Submarine Cables- Three Circuits

Total: \$ 662,728,257

C. Southgate to Northgate Offshore Submarine Cables- Three Circuits				
	Material Supply	Labor Supply	Equip Supply	Total
C. Southgate to Northgate Offshore Submarine Cables- Three Circuits				
1. SUBMARINE CABLE	\$ 123,418,486	\$ 151,505,068	\$ 103,122,345	\$ 378,045,899
2. TRANSITION STATION	\$ 318,428	\$ 498,215	\$ 451,747	\$ 1,268,390
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 10,860,827	\$ 55,820,172	\$ 22,033,143	\$ 88,714,142
SUBTOTAL (Costs):	\$ 134,597,741	\$ 207,823,454	\$ 125,607,235	\$ 468,028,430
CONTRACTOR MARK-UP (OH&P)	\$ 24,227,593	\$ 37,408,222	\$ 22,609,302	\$ 84,245,117
SUBTOTAL:	\$ 158,825,335	\$ 245,231,676	\$ 148,216,537	\$ 552,273,548
CONTINGENCY ON ENTIRE PROJECT	\$ 31,765,067	\$ 49,046,335	\$ 29,643,307	\$ 110,454,710
TOTAL:	\$ 190,590,401	\$ 294,278,011	\$ 177,859,845	\$ 662,728,257

Description of Work: Submarine section of Southgate-Northgate 400kV transmission line. Total line length is 45 miles, this estimate includes 16 mile miles of submarine cable. The submarine segment will consist of 5,000 kmil XLPE armored cable buried below the Long Island Sound.
(response- updated length 14.87 miles)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
C. Southgate to Northgate Offshore Submarine Cables- Three Circuits										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 400kV DC, 5000kCMIL, Cu, Single Core, XLPE Armored, Submarine	518,190	FT	\$ 219			\$ 113,483,557	\$ -	\$ -	\$ 113,483,557
1.2	Submarine Cable - 400kV DC, 5000kCMIL, Cu, Single Core, XLPE Armored, Submarine	259,095	FT		\$ 400	\$ 250	\$ -	\$ 103,637,952	\$ 64,773,720	\$ 168,411,672
1.3	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 28,220,544	\$ 18,813,696	\$ -	\$ 28,220,544	\$ 18,813,696	\$ 47,034,240
1.4	Submarine Cable Splicing if Required 400kV DC, 5000kCMIL, Cu, Single Core, XLPE Armored, Submarine	-	EA				\$ -	\$ -	\$ -	\$ -
1.5	Cable Transition Splice	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.6	Outdoor Termination	-	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ -	\$ -	\$ -	\$ -
1.7	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.8	HDD along Route	12,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 9,600,000	\$ 19,200,000	\$ 19,200,000	\$ 48,000,000
1.9	Trench Box Shoring & Trench Box Install Crew	0	LS		\$ 33,891	\$ 22,594	\$ -	\$ -	\$ -	\$ -
1.10	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
1.11	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
1.12	Supply & Install 6" Sand Bedding for direct bury conduits	-	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
1.13	Supply & Install Thermal Backfill	-	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
1.14	Supply & Install Concrete Cap (6")	-	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
1.15	Native Backfill -direct bury conduits sys Trench	-	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
1.16	Conduit 15" HDPE	-	LF	\$ 150.0	\$ 45.0	\$ 30.0	\$ -	\$ -	\$ -	\$ -
1.17	Conduit 4" HDPE	-	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
1.18	Conduit 2" HDPE	-	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
1.19	Warning Tape	-	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBMARINE CABLE :							\$ 123,418,486	\$ 151,505,068	\$ 103,122,345	\$ 378,045,899
2. TRANSITION STATION										
2.1	Site Clearing	1.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 10,800	\$ 7,200	\$ 18,000
2.2	Demolition	1	LS	-	120,000.00	80,000.00	\$ -	\$ 120,000	\$ 80,000	\$ 200,000
2.3	Temporary fencing	1,000	LF	7.50	5.25	2.25	\$ 7,500	\$ 5,250	\$ 2,250	\$ 15,000
2.4	Trench Box Shoring (Vault)	6	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 108,475	\$ 162,712	\$ 271,186
2.5	Splice Vault Excavation	1,053	CY		\$ 17.5	\$ 7.5	\$ -	\$ 18,431	\$ 7,899	\$ 26,330
2.6	Splice Vault Supply & Installation	6	EA	\$ 25,000	\$ 10,000	\$ 15,000	\$ 150,000	\$ 60,000	\$ 90,000	\$ 300,000
2.7	Splice Vault Backfill	316	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,423	\$ 1,896	\$ 6,319
2.8	Link Box & MH racking	6	EA	\$ 20,988	\$ 18,550	\$ 7,950	\$ 125,928	\$ 111,302	\$ 47,701	\$ 284,931
2.9	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.10	Restoration (incl. Paving)	2,500	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 35,000	\$ 35,000	\$ 17,500	\$ 87,500
2.11	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.12	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.13	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.14	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Excess Materials Disposal to Certified Backfill	958	CY		\$ 24.5	\$ 10.5	\$ -	\$ 23,481	\$ 10,063	\$ 33,544
2.16	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.17	Dewatering	6	EA			\$ 4,000	\$ -	\$ -	\$ 24,000	\$ 24,000
2.18	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.20	Excavated material - stockpile management	1,053	CF		\$ 1.0	\$ 0.5	\$ -	\$ 1,053	\$ 527	\$ 1,580
2.21							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 318,428	\$ 498,215	\$ 451,747	\$ 1,268,390
C. Southgate to Northgate Offshore Submarine Cables- Three Circuits							\$ 123,736,914	\$ 152,003,282	\$ 103,574,092	\$ 379,314,289
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 5,500,000	\$ 4,500,000	\$ -	\$ 5,500,000	\$ 4,500,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,793,142.89		\$ -	\$ 3,793,143	\$ -	\$ 3,793,143
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		15,172,571.55		\$ -	\$ 15,172,572	\$ -	\$ 15,172,572
3.4	Utility PM and Project Oversight	1.00	LS		3,793,142.89		\$ -	\$ 3,793,143	\$ -	\$ 3,793,143
3.5	Site Accommodation, Facilities, Storage	1.00	LS			3,793,142.89	\$ -	\$ -	\$ 3,793,143	\$ 3,793,143
	Engineering									
3.6	Design Engineering	1	LS		\$ 18,965,714		\$ -	\$ 18,965,714	\$ -	\$ 18,965,714
3.7	Surveying/Staking	1	LS		\$ 2,655,200		\$ -	\$ 2,655,200	\$ -	\$ 2,655,200
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
3.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,793,143		\$ -	\$ 3,793,143	\$ -	\$ 3,793,143
3.11	Environmental-special studies/investigation	1	LS		\$ 570,000		\$ -	\$ 570,000	\$ -	\$ 570,000
3.12	Warranties / LOC's	1	LS		\$ 1,137,943		\$ -	\$ 1,137,943	\$ -	\$ 1,137,943
3.13	Laydown Lease	1	LS		\$ -	\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
3.14	Laydown Lease & temporary easement		LS		\$ -		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.16	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
3.17	Bonds	1	LS			\$ 13,240,000	\$ -	\$ -	\$ 13,240,000	\$ 13,240,000
3.18	Sales Tax on Materials	8.8%	LS	\$ 123,418,486			\$ 10,860,827	\$ -	\$ -	\$ 10,860,827
3.19	Contractor Permits	1	LS		\$ 379,314		\$ -	\$ 379,314	\$ -	\$ 379,314
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,860,827	\$ 55,820,172	\$ 22,033,143	\$ 88,714,142

LS Power - T035

D. OH Transmission_Existing Millwood Substation

Total: \$ 6,372,000

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
D. OH Transmission_Existing Millwood Substation				
1. OH Transmission_Millwood Substation	\$ 1,800,000	\$ 1,080,000	\$ 720,000	\$ 3,600,000
2.. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 450,000	\$ 270,000	\$ 180,000	\$ 900,000
SUBTOTAL (Costs):	\$ 2,250,000	\$ 1,350,000	\$ 900,000	\$ 4,500,000
CONTRACTOR MARK-UP (OH&P)	\$ 405,000	\$ 243,000	\$ 162,000	\$ 810,000
SUBTOTAL:	\$ 2,655,000	\$ 1,593,000	\$ 1,062,000	\$ 5,310,000
CONTINGENCY ON ENTIRE PROJECT	\$ 531,000	\$ 318,600	\$ 212,400	\$ 1,062,000
TOTAL:	\$ 3,186,000	\$ 1,911,600	\$ 1,274,400	\$ 6,372,000

Description of Work:Various exisitng transmission system upgrades										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
D. OH Transmission_Existing Millwood Substation										
1. OH Transmission_Millwood Substation										
1.1	345kV OH Ckt	0.9	CKT MILE	\$ 2,000,000	\$ 1,200,000	\$ 800,000	\$ 1,800,000	\$ 1,080,000	\$ 720,000	\$ 3,600,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL -OH Transmission_Existing Millwood Substation							\$ 1,800,000	\$ 1,080,000	\$ 720,000	\$ 3,600,000
D. OH Transmission_Existing Millwood Substation							\$ 1,800,000.00	\$ 1,080,000.00	\$ 720,000.00	\$ 3,600,000.00
2.. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
2.1	MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	1.0	LS	\$ 450,000	\$ 270,000	\$ 180,000	\$ 450,000	\$ 270,000	\$ 180,000	\$ 900,000
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 450,000	\$ 270,000	\$ 180,000	\$ 900,000

LS Power - T035

E. 138kV Upgrades

Total: \$ 12,173,188

LS Power - T035				
	Material Supply	Labor Supply	Equip Supply	Total
E. 138kV Upgrades				
1. Ronkonkoma-Holbrook CT upgrade	\$ 232,029	\$ 131,707	\$ 64,347	\$ 428,083
2. West Bus-Kings-Pligrim CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
3. Central Islip-Ronkonkoma CT Upgrade	\$ 162,420	\$ 92,195	\$ 45,043	\$ 299,658
4. Holbrook -West Bus CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
5. Central Islip-Hauppauge 138kv Upgrade-				
6. Hauppauge Terminal Upgrades	\$ 120,000	\$ 90,000	\$ 90,000	\$ 300,000
7. Pilgrim Terminal Upgrades and PAR- See 9. Pilgrim Road Sub Int. Tab	\$ -	\$ -	\$ -	\$ -
8. Pilgrim-Hauppauge 138kV	\$ 500,000	\$ 250,000	\$ 250,000	\$ 1,000,000
9. East Garden City-Carle Place 138kV Upgrade	\$ 500,000	\$ 250,000	\$ 250,000	\$ 1,000,000
10. East Garden City-Rosyln 138kV Upgrade	\$ 1,250,000	\$ 625,000	\$ 625,000	\$ 2,500,000
11. Glenwood South-Shore Road Terminal Upgrade	\$ 120,000	\$ 90,000	\$ 90,000	\$ 300,000
12. Valley Stream Relay Upgrades-See 11. Valley Stream Sub Int. Tab	\$ -	\$ -	\$ -	\$ -
13. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 305,589	\$ 1,115,626	\$ 320,527	\$ 1,741,743
SUBTOTAL (Costs):	\$ 3,746,909	\$ 2,960,626	\$ 1,889,349	\$ 8,596,884
CONTRACTOR MARK-UP (OH&P)	\$ 674,444	\$ 532,913	\$ 340,083	\$ 1,547,439
SUBTOTAL:	\$ 4,421,353	\$ 3,493,539	\$ 2,229,432	\$ 10,144,324
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ 2,028,865
TOTAL:	\$ 4,421,353	\$ 3,493,539	\$ 2,229,432	\$ 12,173,188

Description of Work:Various existng transmission system upgrades										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
E. 138kV Upgrades										
1. Ronkonkoma-Holbrook CT upgrade										
1.1	CT Replacement	10	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 180,000	\$ 79,701	\$ 34,158	\$ 293,858
1.2	CT Replacement-foundation	50	CY	\$ 704	\$ 804	\$ 503	\$ 35,194	\$ 40,222	\$ 25,139	\$ 100,555
1.3	CT Replacement-structure	10	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 16,835	\$ 11,785	\$ 5,051	\$ 33,670
							\$ -	\$ -	\$ -	\$ -
TOTAL -Ronkonkoma-Holbrook CT upgrade:							\$ 232,029	\$ 131,707	\$ 64,347	\$ 428,083
2. West Bus-Kings-Pligrim CT Upgrade										
2.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
2.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
2.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
							\$ -	\$ -	\$ -	\$ -
TOTAL - West Bus-Kings-Pligrim CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
3. Central Islip-Ronkonkoma CT Upgrade										
3.1	CT Replacement	7	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 126,000	\$ 55,791	\$ 23,910	\$ 205,701
3.2	CT Replacement-foundation	35	CY	\$ 704	\$ 804	\$ 503	\$ 24,636	\$ 28,155	\$ 17,597	\$ 70,389
3.3	CT Replacement-structure	7	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 11,785	\$ 8,249	\$ 3,535	\$ 23,569
							\$ -	\$ -	\$ -	\$ -
TOTAL - Central Islip-Ronkonkoma CT Upgrade:							\$ 162,420	\$ 92,195	\$ 45,043	\$ 299,658
4. Holbrook -West Bus CT Upgrade										
4.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
4.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
4.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
							\$ -	\$ -	\$ -	\$ -
TOTAL - Holbrook -West Bus CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
5. Central Islip-Hauppauge 138kv Upgrade										
5.1	Pipe Type Cable Upgrade (2mi) & Bus Conductor upgrade	1	LS				\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - Central Islip-Hauppauge 138kv Upgrade :							\$ -	\$ -	\$ -	\$ -
6. Hauppauge Terminal Upgrades										
6.1	Bus Conductor and Switch Upgrades	1	LS				\$ 120,000	\$ 90,000	\$ 90,000	\$ 300,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Hauppauge Terminal Upgrades :							\$ 120,000	\$ 90,000	\$ 90,000	\$ 300,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
7. Pilgrim Terminal Upgrades and PAR- See 9. Pilgrim Road Sub Int. Tab										
7.1	Bus Conductor and Switch Upgrades		LS							
7.2	Phase Angle Regulating Transformer		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - Pilgrim Terminal Upgrades and PAR :							\$ -	\$ -	\$ -	\$ -
8. Pilgrim-Hauppauge 138kV										
8.1	138kV Line Upgrade	2	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 500,000	\$ 250,000	\$ 250,000	\$ 1,000,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Pilgrim-Hauppauge 138kV :							\$ 500,000	\$ 250,000	\$ 250,000	\$ 1,000,000
9. East Garden City-Carle Place 138kV Upgrade										
9.1	138kV Line Upgrade	2	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 500,000	\$ 250,000	\$ 250,000	\$ 1,000,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - East Garden City-Carle Place 138kV Upgrade :							\$ 500,000	\$ 250,000	\$ 250,000	\$ 1,000,000
10. East Garden City-Roslyn 138kV Upgrade										
10.1	138kV Line Upgrade	5	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,250,000	\$ 625,000	\$ 625,000	\$ 2,500,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Control Center Upgrade :							\$ 1,250,000	\$ 625,000	\$ 625,000	\$ 2,500,000
11. Glenwood South-Shore Road Terminal Upgrade										
11.1	Bus Conductor and Terminal Upgrades	1	LS				\$ 120,000	\$ 90,000	\$ 90,000	\$ 300,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Glenwood South-Shore Road Terminal Upgrade :							\$ 120,000	\$ 90,000	\$ 90,000	\$ 300,000
12. Valley Stream Relay Upgrades-See 11. Valley Stream Sub Int. Tab										
12.1	Bus Differential Panel Replacement		EA	42,656.23	4,151.16	461.24	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - Valley Stream Relay Upgrades :							\$ -	\$ -	\$ -	\$ -
E. 138kV Upgrades							\$ 3,441,319.93	\$ 1,845,000.07	\$ 1,568,821.68	\$ 6,855,141.67
13. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
9.1	Mob / Demob	1.0	LS		11,948.38	5,120.73	\$ -	\$ 11,948.38	\$ 5,120.73	\$ 17,069.11
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		68,551.42		\$ -	\$ 68,551	\$ -	\$ 68,551
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		274,205.67		\$ -	\$ 274,206	\$ -	\$ 274,206
9.4	Utility PM and Project Oversight	1.00	LS		68,551.42		\$ -	\$ 68,551	\$ -	\$ 68,551
9.5	Site Accommodation, Facilities, Storage	1.00	LS			68,551.42	\$ -	\$ -	\$ 68,551	\$ 68,551
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 342,757	\$ -	\$ -	\$ 342,757	\$ -	\$ 342,757
4.7	LiDAR /GPR	-	LS		\$ 205,654	\$ 137,103	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	Location		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 260,495		\$ -	\$ 260,495	\$ -	\$ 260,495
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 68,551		\$ -	\$ 68,551	\$ -	\$ 68,551
4.12	Environmental-special studies/investigation	-	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 20,565		\$ -	\$ 20,565	\$ -	\$ 20,565
4.14	Laydown Lease & temporary easement		LS				\$ -	\$ -	\$ -	\$ -
4.15	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS			-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 240,000	\$ -	\$ -	\$ 240,000	\$ 240,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 3,441,319.93			\$ 305,589	\$ -	\$ -	\$ 305,589
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 6,855	\$ -	\$ -	\$ 6,855	\$ 6,855
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 305,589	\$ 1,115,626	\$ 320,527	\$ 1,741,743

ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This T035 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock (except areas in Westchester Co where rock is expected). More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 _Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP
10	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	Longshore-Southgate, Southgate to Northgate construction duration is based on the milestone schedule provided. Assumed the construction duration is 12 months for 138kv upgrades
36	The submarine cable quantity is calculated based on # of cables and the route length with 10% addition. The submarine installation quantity is based on # of passes and the route length with 10% addition, we assumed 2 cables per pass, there are 3 passes for this segment.
37	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
38	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
39	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
40	Substation pad is based on 8" base and 6" surfacing rock.
41	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
42	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
43	The control panels quantities and values are provided by Sub Station Engineers.
44	Project management cost length for Longshore, Southgate and Northgate station is based on length provided in milestone schedule. Other interconnection segments based on assumptions.
45	Assumed a new access road (500') is required connecting Northgate to existing Millwood substation
46	Based on the proximity to the existing substation, assumed blasting is not permitted for rock removal at Northgate site. Assumed 50% rock excavation, the rock removal estimated cost is based on mechanical means. The cost could vary based on the geotechnical finding.
47	Project management cost length for Longshore, Southgate and Northgate station is based on length provided in milestone schedule. Other interconnection segments based on assumptions.

NEXtera Energy- TO36 Core 1		
REVISION: 1		
NEXtera Energy- TO36 Core 1 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345kv Substation	\$ 54,287,315
Direct Labor, Material & Equipment Costs	2.Station 252 New East Garden City 345 Substation	\$ 169,585,051
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,095,138
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 322,019,268
Direct Labor, Material & Equipment Costs	12. Existing Ruland Road 138 kV Substation Upgrade	\$ 1,077,395
Direct Labor, Material & Equipment Costs	13.Exisitng East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 812,281,414
CONTRACTOR MARK-UP (OH&P)		\$ 130,676,655
SUBTOTAL (AFTER MU):		\$ 942,958,069
CONTINGENCY ON ENTIRE PROJECT		\$ 188,591,614
Substation TOTAL:		\$ 1,131,549,683
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 195,310,866
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 424,887,357
Direct Labor, Material & Equipment Costs	Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Ruland 345 kV)	\$ 217,033,473
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit	\$ 130,556,641
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 8,268,700
SUBTOTAL (Costs):		\$ 1,607,359,414
CONTRACTOR MARK-UP (OH&P)		\$ 289,324,695
SUBTOTAL (AFTER MU):		\$ 1,896,684,109
CONTINGENCY ON ENTIRE PROJECT		\$ 379,336,822
Transmission Line TOTAL:		\$ 2,276,020,931
NEXtera Energy- TO36 Core 1Total Direct Cost		\$ 3,407,570,613

NEXtera Energy- TO36 Core 1 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345kv Substation	\$ 15,736,579
Indirect Costs	2.Station 252 New East Garden City 345 Substation	\$ 79,716,796
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 334,752
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 99,114,306
Indirect Costs	12. Existing Ruland Road 138 kV Substation Upgrade	\$ 356,246
Indirect Costs	13.Exisitng East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 272,394,968
CONTRACTOR MARK-UP (OH&P)		\$ 49,031,094
SUBTOTAL (AFTER MU):		\$ 321,426,063
CONTINGENCY ON ENTIRE PROJECT		\$ 64,285,213
Substation TOTAL:		\$ 385,711,275
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 49,373,632
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)	\$ 101,825,530
Indirect Costs	Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Ruland 345 kV)	\$ 55,307,165
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 50,420,274
Indirect Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit	\$ 33,606,126
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,645,378
SUBTOTAL (Costs):		\$ 405,106,891
CONTRACTOR MARK-UP (OH&P)		\$ 72,919,240
SUBTOTAL (AFTER MU):		\$ 478,026,132
CONTINGENCY ON ENTIRE PROJECT		\$ 95,605,226
Transmission Line TOTAL:		\$ 573,631,358
NEXtera Energy- TO36 Core 1 Total Indirect Cost		\$ 959,342,633
NEXtera Energy- TO36 Core 1 Total		\$ 4,366,913,246

NEXTera Energy- TO36 Core 1

1. Station 29 New Ruland Road 345kv Substation

Total: \$ 97,499,274

NEXTera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345kv Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736
2. SUBSTATION FOUNDATIONS	\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,219
3. SUBSTATION STRUCTURES	\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495
4. MAJOR EQUIPMENT	\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278
5. LOW VOLTAGE & CONTROL CABLE	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
6. CONDUIT & CABLE TRENCH	\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,296
7. GROUND GRID	\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,314
8. CONTROL ENCLOSURE	\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,858
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 29,397,161	\$ 19,987,089	\$ 9,149,644	\$ 58,533,894
SUBTOTAL (Costs):	\$ 35,142,161	\$ 23,434,089	\$ 11,447,644	\$ 70,023,894
CONTRACTOR MARK-UP (OH&P)	\$ 5,636,189	\$ 3,804,496	\$ 1,784,816	\$ 11,225,501
SUBTOTAL:	\$ 40,778,350	\$ 27,238,585	\$ 13,232,460	\$ 81,249,395
CONTINGENCY ON ENTIRE PROJECT	\$ 8,155,670	\$ 5,447,717	\$ 2,646,492	\$ 16,249,879
TOTAL:	\$ 48,934,020	\$ 32,686,303	\$ 15,878,952	\$ 97,499,274

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, and modification at exisitng 138kv Ruland station (replace with two hybrid circuit breaker)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1. Station 29 New Ruland Road 345kv Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 37,800	\$ 25,200	\$ 63,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	5,647	CY		24.50	10.50	\$ -	\$ 138,343	\$ 59,290	\$ 197,633
1.5	Site Grading- Excavation for Substation Pad	16,940	CY		9.00	6.00	\$ -	\$ 152,460	\$ 101,640	\$ 254,100
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	9,148	CY		21.00	9.00	\$ -	\$ 192,099.60	\$ 82,328.40	\$ 274,428.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	13,721	CY		2.40	1.60	\$ -	\$ 32,931	\$ 21,954	\$ 54,886
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	9,148	CY	25.00	2.40	1.60	\$ 228,690	\$ 21,954	\$ 14,636	\$ 265,280
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	16,940	SY	11.00	6.00	4.00	\$ 186,340	\$ 101,640	\$ 67,760	\$ 355,740
1.11	Site Surfacing - Aggregate 6" Thick	16,940	SY	16.50	4.50	3.00	\$ 279,510	\$ 76,230	\$ 50,820	\$ 406,560
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,439	LF	13.85	13.85	6.92	\$ 19,927	\$ 19,927	\$ 9,964	\$ 49,818
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	11,952	SF	1.50	1.50	1.00	\$ 17,928	\$ 17,928	\$ 11,952	\$ 47,808
1.17	Erosion Control-Silt fence install & remove	2,700	LF	2.41	3.16	0.72	\$ 6,507	\$ 8,532	\$ 1,944	\$ 16,983
1.18	Temporary fencing	1,800	LF	7.50	5.25	2.25	\$ 13,500	\$ 9,450	\$ 4,050	\$ 27,000
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.10	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.11	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.12	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.13	345/138KV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,219
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	15	EA	4,810.00	2,886.00	1,924.00	\$ 72,150	\$ 43,290	\$ 28,860	\$ 144,300
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.10	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.11	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.12	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.21	AL. Bus fittings	1	LS	22,500.00	22,500.00	11,250.00	\$ 22,500	\$ 22,500	\$ 11,250	\$ 56,250
3.22	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600
4.2	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
4.3	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.4	345/138KV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800
4.5	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.6	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	37,500	LF	5.30	1.43	0.29	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,750	LF	11.15	10.80	5.40	\$ 75,263	\$ 72,900	\$ 36,450	\$ 184,613
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.14	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,296
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,705	LF	2.09	3.42	1.46	\$ 26,566	\$ 43,391	\$ 18,596	\$ 88,554
7.2	Caweld, DSA, 4/0 , T, CROSS	351	EA	165.00	75.00		\$ 57,915	\$ 26,325	\$ -	\$ 84,240
7.3	Ground Rod, 3/4" x 15'	312	EA	135.00	67.50	7.50	\$ 42,120	\$ 21,060	\$ 2,340	\$ 65,520
TOTAL - GROUND GRID							\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,314
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunc	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.15	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,858
1. Station 29 New Ruland Road 345kv Substation							\$ 31,906,422	\$ 14,324,879	\$ 8,056,013	\$ 54,287,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		582,256.23	249,538.38	\$ -	\$ 582,256	\$ 249,538	\$ 831,795
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,711,892.59		\$ -	\$ 1,711,893	\$ -	\$ 1,711,893
9.4	Utility PM and Project Oversight	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.5	Site Accommodation, Facilities, Storage	1	LS	427,973.15			\$ 427,973	\$ -	\$ -	\$ 427,973
	Engineering									
9.6	Design Engineering	1.00	LS		3,423,785.17		\$ -	\$ 3,423,785	\$ -	\$ 3,423,785
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		299,581.20		\$ -	\$ 299,581	\$ -	\$ 299,581
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,604,899.30		\$ -	\$ 1,604,899	\$ -	\$ 1,604,899
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		128,391.94		\$ -	\$ 128,392	\$ -	\$ 128,392
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,940,000	\$ -	\$ -	\$ 1,940,000	\$ 1,940,000
9.20	Sales Tax on Materials	8.80%	LS	31,906,422.41			\$ 2,807,765	\$ -	\$ -	\$ 2,807,765
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		54,287.31		\$ -	\$ 54,287	\$ -	\$ 54,287
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579

NEXTera Energy- TO36 Core 1

2.Station 252 New East Garden City 345 Substation

Total: \$ 347,939,735

NEXTera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 252 New East Garden City 345 Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS	\$ 6,183,051	\$ 6,672,230	\$ 4,188,294	\$ 17,043,576
3. SUBSTATION STRUCTURES	\$ 2,079,686	\$ 1,420,019	\$ 821,171	\$ 4,320,876
4. MAJOR EQUIPMENT	\$ 86,834,800	\$ 16,766,972	\$ 11,053,048	\$ 114,654,820
5. LOW VOLTAGE & CONTROL CABLE	\$ 138,265	\$ 37,388	\$ 7,478	\$ 183,131
6. CONDUIT & CABLE TRENCH	\$ 8,746,451	\$ 4,970,057	\$ 2,720,221	\$ 16,436,729
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE	\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,154,293	\$ 28,760,396	\$ 39,802,107	\$ 79,716,796
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 105,028,869	\$ 54,574,217	\$ 54,478,761	\$ 214,081,847
SUBTOTAL (Costs):	\$ 122,638,869	\$ 65,140,217	\$ 61,522,761	\$ 249,301,847
CONTRACTOR MARK-UP (OH&P)	\$ 19,961,796	\$ 10,457,319	\$ 10,228,817	\$ 40,647,932
SUBTOTAL:	\$ 142,600,665	\$ 75,597,536	\$ 71,751,578	\$ 289,949,779
CONTINGENCY ON ENTIRE PROJECT	\$ 28,520,133	\$ 15,119,507	\$ 14,350,316	\$ 57,989,956
TOTAL:	\$ 171,120,798	\$ 90,717,043	\$ 86,101,894	\$ 347,939,735

Description of Work: New East Garden City 345 kV/138 kV GIS Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 252 New East Garden City 345 Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.4	345kV, Bus support-3 Ph, low	332	CY	703.89	804.44	502.78	\$ 233,549	\$ 266,913	\$ 166,821	\$ 667,283
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	277	CY	703.89	804.44	502.78	\$ 195,117	\$ 222,991	\$ 139,369	\$ 557,477
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	107	CY	703.89	804.44	502.78	\$ 75,316	\$ 86,075	\$ 53,797	\$ 215,188
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.17	345kV, Phase Angle Regulator with oil containment	1,780	CY	703.89	804.44	502.78	\$ 1,252,915	\$ 1,431,903	\$ 894,940	\$ 3,579,758
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.21	345kV, Surge arrester	161	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	1,917	CY	703.89	804.44	502.78	\$ 1,349,094	\$ 1,541,822	\$ 963,639	\$ 3,854,555
2.31	Precast Firewall for transformer, PARs, reactors	29,040	SF	25.00	15.00	10.00	\$ 726,000	\$ 435,600	\$ 290,400	\$ 1,452,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 6,183,051	\$ 6,672,230	\$ 4,188,294	\$ 17,043,576
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.4	345kV, Bus support-3 Ph, low	30	EA	8,346.00	5,758.74	3,839.16	\$ 250,380	\$ 172,762	\$ 115,175	\$ 538,317
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	21	EA	8,346.00	5,758.74	3,839.16	\$ 175,266	\$ 120,934	\$ 80,622	\$ 376,822
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,900	LF	25.00	184.94	123.29	\$ 47,500	\$ 351,382	\$ 234,255	\$ 633,137
3.22	AL. Bus fittings	1	LS	57,000.00	57,000.00	45,000.00	\$ 57,000	\$ 57,000	\$ 45,000	\$ 159,000
3.23	Steel grating and support beams-transformer moat	476,080	LB	2.73	1.17	0.50	\$ 1,300,564	\$ 556,538	\$ 238,516	\$ 2,095,617

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 2,079,686	\$ 1,420,019	\$ 821,171	\$ 4,320,876
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	21	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	30	EA	17,400.00	5,460.00	2,340.00	\$ 522,000	\$ 163,800	\$ 70,200	\$ 756,000
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	2	EA	3,026,425.00	3,520.00	880.00	\$ 6,052,850	\$ 7,040	\$ 1,760	\$ 6,061,650
4.9	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.11	Transport & Testing- Shunt Reactor	7	EA		457,900.00	301,600.00	\$ -	\$ 3,205,300	\$ 2,111,200	\$ 5,316,500
4.12	345kV, Phase Angle Regulator with oil containment	4	EA	12,882,000.00	3,520.00	880.00	\$ 51,528,000	\$ 14,080	\$ 3,520	\$ 51,545,600
4.7	Transport & Testing- PAR	4	EA		615,400.00	406,600.00	\$ -	\$ 2,461,600	\$ 1,626,400	\$ 4,088,000
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.18	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 86,834,800	\$ 16,766,972	\$ 11,053,048	\$ 114,654,820
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	26,100	LF	5.30	1.43	0.29	\$ 138,265	\$ 37,388	\$ 7,478	\$ 183,131
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 138,265	\$ 37,388	\$ 7,478	\$ 183,131
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,400	LF	11.15	10.80	5.40	\$ 60,210	\$ 58,320	\$ 29,160	\$ 147,690
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,746,451	\$ 4,970,057	\$ 2,720,221	\$ 16,436,729
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0 , T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	11	EA	21,328.12	17,062.49	4,265.62	\$ 234,609	\$ 187,687	\$ 46,922	\$ 469,219
8.4	Backup Line Relays (87L): GE L90	11	EA	21,328.12	17,062.49	4,265.62	\$ 234,609	\$ 187,687	\$ 46,922	\$ 469,219
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.22	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.23	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
2.Station 252 New East Garden City 345 Substation							\$ 111,484,576	\$ 36,379,821	\$ 21,720,654	\$ 169,585,051
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,033,516.63	871,507.13	\$ -	\$ 2,033,517	\$ 871,507	\$ 2,905,024
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,343,650.51		\$ -	\$ 1,343,651	\$ -	\$ 1,343,651
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		5,374,602.02		\$ -	\$ 5,374,602	\$ -	\$ 5,374,602
9.4	Utility PM and Project Oversight	1	LS		1,343,650.51		\$ -	\$ 1,343,651	\$ -	\$ 1,343,651
9.5	Site Accommodation, Facilities, Storage	1	LS	1,343,650.51			\$ 1,343,651	\$ -	\$ -	\$ 1,343,651
	Engineering									
9.6	Design Engineering	1.00	LS		10,749,204.05		\$ -	\$ 10,749,204	\$ -	\$ 10,749,204
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		940,555.35		\$ -	\$ 940,555	\$ -	\$ 940,555
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		5,038,689.40		\$ -	\$ 5,038,689	\$ -	\$ 5,038,689
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,343,650.51		\$ -	\$ 1,343,651	\$ -	\$ 1,343,651
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		403,095.15		\$ -	\$ 403,095	\$ -	\$ 403,095
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 6,940,000	\$ -	\$ -	\$ 6,940,000	\$ 6,940,000
9.20	Sales Tax on Materials	8.80%	LS	111,484,575.51			\$ 9,810,643	\$ -	\$ -	\$ 9,810,643
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		169,585.05		\$ -	\$ 169,585	\$ -	\$ 169,585
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,154,293	\$ 28,760,396	\$ 39,802,107	\$ 79,716,796

<u>NEXTera Energy- TO36 Core 1</u>			
<u>3.Station 48 Valley Stream 345/138 kV Substation Upgrades</u>			
Total:	Total:	\$	143,522,216

<u>NEXTera Energy- TO36 Core 1</u>			
<u>3.Station 48 Valley Stream 345/138 kV Substation Upgrades</u>			
Total:	Total:	\$	143,522,216

<u>NEXTera Energy- TO36 Core 1</u>			
<u>3.Station 48 Valley Stream 345/138 kV Substation Upgrades</u>			
Total:	Total:	\$	143,522,216

NEXTera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

[illegible]

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

NEXtera Energy- TO36 Core 1

4.Barrett 138 kV Substation Upgrades

Total: \$ 77,248,534

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
4.Barrett 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS	\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES	\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT	\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID	\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE	\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 22,313,583	\$ 13,117,388	\$ 8,801,554	\$ 44,232,524
SUBTOTAL (Costs):	\$ 28,058,583	\$ 16,564,388	\$ 11,099,554	\$ 55,722,524
CONTRACTOR MARK-UP (OH&P)	\$ 4,361,145	\$ 2,567,950	\$ 1,722,160	\$ 8,651,254
SUBTOTAL:	\$ 32,419,728	\$ 19,132,338	\$ 12,821,713	\$ 64,373,779
CONTINGENCY ON ENTIRE PROJECT	\$ 6,483,946	\$ 3,826,468	\$ 2,564,343	\$ 12,874,756
TOTAL:	\$ 38,903,673	\$ 22,958,805	\$ 15,386,056	\$ 77,248,534

Description of Work: Construct a Barrett 138kV GIS substation adjacent to the existing Barrett 138kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 23,760	\$ 15,840	\$ 39,600
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,115	SY	4.85	7.20	4.80	\$ 10,257	\$ 15,227	\$ 10,151	\$ 35,636
1.4	Strip and Dispose Top Soil	3,549	CY		24.50	10.50	\$ -	\$ 86,959	\$ 37,268	\$ 124,227
1.5	Site Grading- Excavation for Substation Pad	10,648	CY		9.00	6.00	\$ -	\$ 95,832	\$ 63,888	\$ 159,720
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	5,750	CY		21.00	9.00	\$ -	\$ 120,748.32	\$ 51,749.28	\$ 172,497.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	8,625	CY		2.40	1.60	\$ -	\$ 20,700	\$ 13,800	\$ 34,500
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	5,750	CY	25.00	2.40	1.60	\$ 143,748	\$ 13,800	\$ 9,200	\$ 166,748
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	10,648	SY	11.00	6.00	4.00	\$ 117,128	\$ 63,888	\$ 42,592	\$ 223,608
1.11	Site Surfacing - Aggregate 6" Thick	10,648	SY	16.50	4.50	3.00	\$ 175,692	\$ 47,916	\$ 31,944	\$ 255,552
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,056	LF	13.85	13.85	6.92	\$ 14,623	\$ 14,623	\$ 7,312	\$ 36,559
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	8,896	SF	1.50	1.50	1.00	\$ 13,344	\$ 13,344	\$ 8,896	\$ 35,584
1.17	Erosion Control-Silt fence install & remove	1,620	LF	2.41	3.16	0.72	\$ 3,904	\$ 5,119	\$ 1,166	\$ 10,190
1.18	Temporary fencing	1,080	LF	7.50	5.25	2.25	\$ 8,100	\$ 5,670	\$ 2,430	\$ 16,200
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

5.Dunwoodie 345 kV GIS Substation

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
5.Dunwoodie 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS	\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT	\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID	\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE	\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 11,599,927	\$ 9,176,864	\$ 6,637,039	\$ 27,413,830
SUBTOTAL (Costs):	\$ 21,764,927	\$ 15,275,864	\$ 10,703,039	\$ 47,743,830
CONTRACTOR MARK-UP (OH&P)	\$ 2,697,887	\$ 2,017,775	\$ 1,438,627	\$ 6,154,289
SUBTOTAL:	\$ 24,462,814	\$ 17,293,639	\$ 12,141,665	\$ 53,898,119
CONTINGENCY ON ENTIRE PROJECT	\$ 4,892,563	\$ 3,458,728	\$ 2,428,333	\$ 10,779,624
TOTAL:	\$ 29,355,377	\$ 20,752,367	\$ 14,569,999	\$ 64,677,743

Description of Work: Construct a new Dunwoodie 345kV GIS substation. Loop in the Pleasantville (2) and Sprain Brook lines and connect back to the existing Dunwoodie 345kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5.Dunwoodie 345 kV GIS Substation										
1. SITE PREP / GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 17,137	\$ 11,425	\$ 28,562
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,263	SY	4.85	7.20	4.80	\$ 6,124	\$ 9,092	\$ 6,061	\$ 21,278
1.4	Strip and Dispose Top Soil	2,560	CY		24.50	10.50	\$ -	\$ 62,720	\$ 26,880	\$ 89,600
1.5	Site Grading- Excavation for Substation Pad	7,680	CY		9.00	6.00	\$ -	\$ 69,120	\$ 46,080	\$ 115,200
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	4,147	CY		21.00	9.00	\$ -	\$ 87,091.20	\$ 37,324.80	\$ 124,416.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	6,221	CY		2.40	1.60	\$ -	\$ 14,930	\$ 9,953	\$ 24,883
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,147	CY	25.00	2.40	1.60	\$ 103,680	\$ 9,953	\$ 6,636	\$ 120,269
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	7,680	SY	11.00	6.00	4.00	\$ 84,480	\$ 46,080	\$ 30,720	\$ 161,280
1.11	Site Surfacing - Aggregate 6" Thick	7,680	SY	16.50	4.50	3.00	\$ 126,720	\$ 34,560	\$ 23,040	\$ 184,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	864	LF	13.85	13.85	6.92	\$ 11,965	\$ 11,965	\$ 5,982	\$ 29,912
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	325,073.45	83,781.82	55,348.36	\$ 325,073	\$ 83,782	\$ 55,348	\$ 464,204
1.16	Seeding	7,296	SF	1.50	1.50	1.00	\$ 10,944	\$ 10,944	\$ 7,296	\$ 29,184
1.17	Erosion Control-Silt fence install & remove	2,100	LF	2.41	3.16	0.72	\$ 5,061	\$ 6,636	\$ 1,512	\$ 13,209
1.18	Temporary fencing	1,400	LF	7.50	5.25	2.25	\$ 10,500	\$ 7,350	\$ 3,150	\$ 21,000
1.19	Substation entrance with asphalt	486	SY	19.50	26.00	19.50	\$ 9,479	\$ 12,639	\$ 9,479	\$ 31,597

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
4.28	Transport & Testing- GIL	0	LS		-	-				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
5.Dunwoodie 345 kV GIS Substation							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931
9.4	Utility PM and Project Oversight	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733
	Engineering									
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565

<u>NEXTera Energy- TO36 Core 1</u>		
<u>6.Elwood 138 kV Substation Upgrades</u>		
Total:	\$	7,946,839

	Total:	\$	7,946,839
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NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT	\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563
SUBTOTAL (Costs):	\$ 3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$ 692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$ 4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$ 908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$ 5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVAR reactor (1 block) at the exisitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVAR)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00		\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

<u>NEXTera Energy- TO36 Core 1</u>	
<u>7.Jamaica 138 kV Substation Upgrades</u>	
Total:	\$ 2,024,724

<u>NEXTera Energy- TO36 Core 1</u>	
<u>7.Jamaica 138 kV Substation Upgrades</u>	
Total:	\$ 2,024,724

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
7.Jamaica 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES	\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT	\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752
SUBTOTAL (Costs):	\$ 658,333	\$ 579,029	\$ 192,528	\$ 1,429,890
CONTRACTOR MARK-UP (OH&P)	\$ 118,500	\$ 104,225	\$ 34,655	\$ 257,380
SUBTOTAL:	\$ 776,832	\$ 683,255	\$ 227,183	\$ 1,687,270
CONTINGENCY ON ENTIRE PROJECT	\$ 155,366	\$ 136,651	\$ 45,437	\$ 337,454.06
TOTAL:	\$ 932,199	\$ 819,906	\$ 272,620	\$ 2,024,724

Description of Work: Add an additional terminal at the existing Jamaica 138kV substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345/138kV Gas-Insulated Bus Conductor	246	LF	550.00	275.00	82.50	\$ 135,300	\$ 67,650	\$ 20,295	\$ 223,245
4.30	345/138kV Gas-Insulated Bus Conductor-elbow	6	EA	2,500.00	1,250.00	375.00	\$ 15,000	\$ 7,500	\$ 2,250	\$ 24,750
4.31	Transport & Testing- GIL	1	LS		27,054.00	18,036.00	\$ -	\$ 27,054	\$ 18,036	\$ 45,090
TOTAL - MAJOR EQUIPMENT							\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
7.Jamaica 138 kV Substation Upgrades							\$ 595,020	\$ 355,092	\$ 145,026	\$ 1,095,138
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,504.13	7,501.77	\$ -	\$ 17,504	\$ 7,502	\$ 25,006
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,805.51		\$ -	\$ 43,806	\$ -	\$ 43,806
9.4	Utility PM and Project Oversite	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.5	Site Accommodation, Facilities, Storage	1	LS	10,951.38			\$ 10,951	\$ -	\$ -	\$ 10,951
	Engineering									
9.6	Design Engineering	1.00	LS		87,611.01		\$ -	\$ 87,611	\$ -	\$ 87,611
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,665.96		\$ -	\$ 7,666	\$ -	\$ 7,666
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		41,067.66		\$ -	\$ 41,068	\$ -	\$ 41,068
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		10,951.38		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,285.41		\$ -	\$ 3,285	\$ -	\$ 3,285
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	595,019.53			\$ 52,362	\$ -	\$ -	\$ 52,362
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,095.14		\$ -	\$ 1,095	\$ -	\$ 1,095
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752

NEXTera Energy- TO36 Core 1

8.Newbridge 345/138 kV GIS Substation Upgrades

Total: \$ 89,858,233

NEXTera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPTMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION #REF!										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
	Engineering									
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech		EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

<u>NEXTera Energy- TO36 Core 1</u>		
<u>9.Rainey 345kV GIS Substation Upgrades</u>		
Total:	\$	45,946,157

<u>NEXTera Energy- TO36 Core 1</u>		
<u>9.Rainey 345kV GIS Substation Upgrades</u>		
Total:	\$	45,946,157

<u>NEXTera Energy- TO36 Core 1</u>		
<u>9.Rainey 345kV GIS Substation Upgrades</u>		
Total:	\$	45,946,157

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
9.Rainey 345kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID	\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE	\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 8,610,766	\$ 8,924,115	\$ 5,696,359	\$ 23,231,241
SUBTOTAL (Costs):	\$ 13,740,766	\$ 12,002,115	\$ 7,748,359	\$ 33,491,241
CONTRACTOR MARK-UP (OH&P)	\$ 1,857,738	\$ 1,791,021	\$ 1,148,465	\$ 4,797,223
SUBTOTAL:	\$ 15,598,504	\$ 13,793,136	\$ 8,896,824	\$ 38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$ 3,119,701	\$ 2,758,627	\$ 1,779,365	\$ 7,657,693
TOTAL:	\$ 18,718,205	\$ 16,551,763	\$ 10,676,189	\$ 45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.Rainey 345kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,856	\$ 5,904	\$ 14,760
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	989	SY	4.85	7.20	4.80	\$ 4,796	\$ 7,120	\$ 4,747	\$ 16,663
1.4	Strip and Dispose Top Soil	1,323	CY		24.50	10.50	\$ -	\$ 32,412	\$ 13,891	\$ 46,303
1.5	Site Grading- Excavation for Substation Pad	3,969	CY		9.00	6.00	\$ -	\$ 35,719	\$ 23,813	\$ 59,532
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,143	CY		21.00	9.00	\$ -	\$ 45,006.19	\$ 19,288.37	\$ 64,294.56
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,215	CY		2.40	1.60	\$ -	\$ 7,715	\$ 5,144	\$ 12,859
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,143	CY	25.00	2.40	1.60	\$ 53,579	\$ 5,144	\$ 3,429	\$ 62,151
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,969	SY	11.00	6.00	4.00	\$ 43,657	\$ 23,813	\$ 15,875	\$ 83,345
1.11	Site Surfacing - Aggregate 6" Thick	3,969	SY	16.50	4.50	3.00	\$ 65,485	\$ 17,860	\$ 11,906	\$ 95,251
1.12	7' Station Fence w/ Barbed Wire & Grounding	726	LF	13.85	13.85	6.92	\$ 10,054	\$ 10,054	\$ 5,027	\$ 25,134
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	109,761.60	38,400.00	25,368.00	\$ 109,762	\$ 38,400	\$ 25,368	\$ 173,530
1.16	Seeding	3,000	SF	1.50	1.50	1.00	\$ 4,500	\$ 4,500	\$ 3,000	\$ 12,000
1.17	Erosion Control-Silt fence install & remove	1,200	LF	2.41	3.16	0.72	\$ 2,892	\$ 3,792	\$ 864	\$ 7,548
1.18	Temporary fencing	800	LF	7.50	5.25	2.25	\$ 6,000	\$ 4,200	\$ 1,800	\$ 12,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
	Engineering									
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

<u>NEXTera Energy- TO36 Core 1</u>			
<u>10.Shore Road 138kV Substation Upgrades</u>			
Total:	Total:	\$	13,943,860

<u>NEXTera Energy- TO36 Core 1</u>			
<u>10.Shore Road 138kV Substation Upgrades</u>			
Total:	Total:	\$	13,943,860

<u>NEXTera Energy- TO36 Core 1</u>			
<u>10.Shore Road 138kV Substation Upgrades</u>			
Total:	Total:	\$	13,943,860

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
10.Shore Road 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS	\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES	\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT	\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936
SUBTOTAL (Costs):	\$ 6,942,247	\$ 2,219,499	\$ 685,612	\$ 9,847,359
CONTRACTOR MARK-UP (OH&P)	\$ 1,249,604	\$ 399,510	\$ 123,410	\$ 1,772,525
SUBTOTAL:	\$ 8,191,851	\$ 2,619,009	\$ 809,023	\$ 11,619,883
CONTINGENCY ON ENTIRE PROJECT	\$ 1,638,370	\$ 523,802	\$ 161,805	\$ 2,323,977
TOTAL:	\$ 9,830,222	\$ 3,142,811	\$ 970,827	\$ 13,943,860

Description of Work: Add a new 250 MVAR reactor at the existing Shore Road 138kV station (5 block of 50 MVAR)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 540	\$ 360	\$ 900
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	81	CY		24.50	10.50	\$ -	\$ 1,976	\$ 847	\$ 2,823
1.5	Site Grading- Excavation for Substation Pad	242	CY		9.00	6.00	\$ -	\$ 2,178	\$ 1,452	\$ 3,630
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	131	CY		21.00	9.00	\$ -	\$ 2,744.28	\$ 1,176.12	\$ 3,920.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	196	CY		2.40	1.60	\$ -	\$ 470	\$ 314	\$ 784
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	131	CY	25.00	2.40	1.60	\$ 3,267	\$ 314	\$ 209	\$ 3,790
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	242	SY	11.00	6.00	4.00	\$ 2,662	\$ 1,452	\$ 968	\$ 5,082
1.11	Site Surfacing - Aggregate 6" Thick	242	SY	16.50	4.50	3.00	\$ 3,993	\$ 1,089	\$ 726	\$ 5,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL. Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534
	Engineering									
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.22	Concrete Retaining Wall- Soil excavation	99,073	CY		9.00	6.00	\$ -	\$ 891,661	\$ 594,440	\$ 1,486,101
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727
1.26	Concrete Retaining Walll- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	350	CY	703.89	804.44	502.78	\$ 246,360	\$ 281,554	\$ 175,971	\$ 703,885
2.15	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,920,956	\$ 2,166,878	\$ 1,355,611	\$ 5,443,445
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,075,966	\$ 901,681	\$ 569,078	\$ 2,546,726
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	16	EA	57,720.00	34,632.00	23,088.00	\$ 923,520	\$ 554,112	\$ 369,408	\$ 1,847,040
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,487.50	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.10	Transport & Testing- Shunt Reactor	2	EA		352,900.00	231,600.00	\$ -	\$ 705,800	\$ 463,200	\$ 1,169,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	641,250.00	384,750.00	256,500.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker	8	EA	350,000.00	57,239.00	24,531.00	\$ 2,800,000	\$ 457,912	\$ 196,248	\$ 3,454,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,194,419.50	716,651.70	477,767.80	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	2,340.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,402,779	\$ 1,823,144	\$ 1,072,736	\$ 13,298,659
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	43,800	LF	5.30	1.43	0.29	\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,100	LF	11.15	10.80	5.40	\$ 90,315	\$ 87,480	\$ 43,740	\$ 221,535
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,018	LF	266.50	53.04	13.26	\$ 537,664	\$ 107,008	\$ 26,752	\$ 671,424
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00				\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00				\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28				\$ -
6.11	345kV UG- Conduit	466	LF	266.73	202.15	100.00				\$ -
6.12	345kV UG- Cable	1,398	LF	167.00	100.20	66.80				\$ -
6.13	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				\$ -
6.14	Fiber Optic Cable	466	LF	7.40	3.33	2.22				\$ -
6.15	Ground Continuity Conductor	466	LF	13.04	7.53	5.02				\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 627,979	\$ 194,488	\$ 70,492	\$ 892,959
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,277	LF	2.09	3.42	1.46	\$ 36,126	\$ 59,006	\$ 25,288	\$ 120,421

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.2	Caweld, DSA, 4/0 , T, CROSS	462	EA	165.00	75.00		\$ 76,230	\$ 34,650	\$ -	\$ 110,880
7.3	Ground Rod, 3/4" x 15'	410	EA	135.00	67.50	7.50	\$ 55,350	\$ 27,675	\$ 3,075	\$ 86,100
TOTAL - GROUND GRID							\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	542,947.99	380,063.60	162,884.40	\$ 542,948	\$ 380,064	\$ 162,884	\$ 1,085,896
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
11.Sprain Brook 345kV Substation Expansion							\$ 45,653,436	\$ 130,816,120	\$ 145,549,713	\$ 322,019,268
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,672,804.15	4,145,487.49	\$ -	\$ 9,672,804	\$ 4,145,487	\$ 13,818,292
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		12,880,770.74		\$ -	\$ 12,880,771	\$ -	\$ 12,880,771
9.4	Utility PM and Project Oversight	1	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.5	Site Accommodation, Facilities, Storage	1	LS	3,220,192.68			\$ 3,220,193	\$ -	\$ -	\$ 3,220,193
	Engineering									
9.6	Design Engineering	1.00	LS		25,761,541.47		\$ -	\$ 25,761,541	\$ -	\$ 25,761,541
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,254,134.88		\$ -	\$ 2,254,135	\$ -	\$ 2,254,135
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		12,075,722.57		\$ -	\$ 12,075,723	\$ -	\$ 12,075,723
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		966,057.81		\$ -	\$ 966,058	\$ -	\$ 966,058
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,124,464.00	\$ -	\$ -	\$ 2,124,464	\$ 2,124,464
9.17	Legal Fees (Real estate)	1.00	LS		-	63,733.92	\$ -	\$ -	\$ 63,734	\$ 63,734
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 11,920,000	\$ -	\$ -	\$ 11,920,000	\$ 11,920,000
9.20	Sales Tax on Materials	8.80%	LS	45,653,435.63			\$ 4,017,502	\$ -	\$ -	\$ 4,017,502
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		322,019.27		\$ -	\$ 322,019	\$ -	\$ 322,019
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,237,695	\$ 73,613,826	\$ 18,262,785	\$ 99,114,306

NEXTera Energy- TO36 Core 1

12. Existing Ruland Road 138 kV Substation Upgrade

Total: \$ 2,030,035

NEXTera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
12. Existing Ruland Road 138 kV Substation Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938.22
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364.35
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410.00
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312.46
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,245.74
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at exisitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12. Existing Ruland Road 138 kV Substation Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus fittings		LS	22,500.00	22,500.00	11,250.00	\$ -	\$ -	\$ -	\$ -
3.21	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPTMENT										
4.1	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.2	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.4	345/138KV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.5	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.13	Fiber Optic Cable	0	LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.14	Ground Continuity Conductor	0	LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	0	EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	Primary Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.21	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
12. Existing Ruland Road 138 kV Substation Upgrade							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXtera Energy- TO36 Core 1

13.Exisitng East Garden City 138 kV Substation Upgrades

Total: \$ 28,298,464

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
13.Exisitng East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13.Exisitng East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	25.00	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.22	AL. Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		457,900.00	301,600.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement		BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester		EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.22	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.23	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.24	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.25	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
13.Exisitng East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversight	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
	Engineering									
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LIDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

<p align="center"> <u>NEXTera Energy- TO36 Core 1</u> <u>Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit</u> <u>(EGC To Dunwoodie 345 kV)</u> </p>	
Total:	\$ 188,625,656

	NEXTera Energy- TO36 Core 1
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	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 5,516	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR /GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

NEXtera Energy- TO36 Core 1

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits

(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)

Total: \$ 346,473,248

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
=A18				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632
SUBTOTAL (Costs):	\$ 92,520,355	\$ 99,703,098	\$ 52,461,045	\$ 244,684,497
CONTRACTOR MARK-UP (OH&P)	\$ 16,653,664	\$ 17,946,558	\$ 9,442,988	\$ 44,043,210
SUBTOTAL:	\$ 109,174,018	\$ 117,649,655	\$ 61,904,033	\$ 288,727,707
CONTINGENCY ON ENTIRE PROJECT	\$ 21,834,804	\$ 23,529,931	\$ 12,380,807	\$ 57,745,541
TOTAL:	\$ 131,008,822	\$ 141,179,587	\$ 74,284,840	\$ 346,473,248

Description of Work: Dunwoodie - New Rochelle Landing (double circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	520	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 832,000	\$ 2,496,000	\$ 832,000	\$ 4,160,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	20,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,496,000	\$ 561,600	\$ 3,057,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-SP -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	8.47	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	357,773	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 715,546	\$ 536,659	\$ 178,886	\$ 1,431,091
2.3	Trench Excavation	33,790	CY		\$ 17.5	\$ 7.5	\$ -	\$ 591,319	\$ 253,422	\$ 844,741
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,520	CY	\$ 50	\$ 25	\$ 14	\$ 175,988	\$ 86,234	\$ 49,277	\$ 311,498
2.5	Supply & Install Thermal Backfill -conduit level	29,566	CY	\$ 350	\$ 245	\$ 105	\$ 10,348,081	\$ 7,243,657	\$ 3,104,424	\$ 20,696,163
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,774	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,754,851	\$ 1,721,782	\$ 688,713	\$ 5,165,345
2.8	Conduit 8" SCH 40PVC	357,773	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 10,232,302	\$ 2,028,572	\$ 869,388	\$ 13,130,262
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	178,886	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 629,680	\$ 563,492	\$ 241,497	\$ 1,434,669
2.11	Warning Tape	44,722	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,708	\$ 11,180	\$ 4,472	\$ 22,361
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	5,984	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,720	\$ 44,880	\$ 149,600
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000
2.15	Splice Vault Backfill	1,795	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,133	\$ 10,771	\$ 35,904

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	536,659	LF			\$ 0.25	\$ -	\$ -	\$ 134,165	\$ 134,165
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	28,581	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 400,133	\$ 400,133	\$ 200,067	\$ 1,000,333
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,939	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 177,678	\$ 186,562	\$ 79,955	\$ 444,195
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	138	EA		\$ 400	\$ 1,200	\$ -	\$ 55,097	\$ 165,291	\$ 220,388
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	138	EA		\$ 10	\$ 15	\$ -	\$ 1,377	\$ 2,066	\$ 3,444
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	296	EA		\$ 400	\$ 1,200	\$ -	\$ 118,264	\$ 354,791	\$ 473,055
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 462,462	\$ 308,308	\$ -	\$ 462,462	\$ 308,308	\$ 770,770
2.24	Excess Materials Disposal to Certified Backfill	49,372	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,209,614	\$ 518,406	\$ 1,728,020
2.25	Rock Excavation and Removal	26,516	CY		\$ 243	\$ 162	\$ -	\$ 6,443,332	\$ 4,295,555	\$ 10,738,886
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,774	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,774	\$ 19,887	\$ 59,660
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	93,915	FT	\$ 7	\$ 3	\$ 2	\$ 694,692	\$ 312,794	\$ 208,530	\$ 1,216,016
3.12	Ground Continuity Conductor	93,915	FT	\$ 13	\$ 8	\$ 5	\$ 1,224,562	\$ 706,901	\$ 471,267	\$ 2,402,731
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Broo							\$ 83,180,792	\$ 70,079,524	\$ 42,050,550	\$ 195,310,866
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,363,902	\$ 2,242,601	\$ -	\$ 3,363,902	\$ 2,242,601	\$ 5,606,504
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		7,812,434.62		\$ -	\$ 7,812,435	\$ -	\$ 7,812,435
4.4	Utility PM and Project Oversight	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.5	Site Accommodation, Facilities, Storage	1	LS	1,953,108.66			\$ 1,953,109	\$ -	\$ -	\$ 1,953,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,765,543	\$ -	\$ -	\$ 9,765,543	\$ -	\$ 9,765,543
4.7	LiDAR /GPR	1.0	LS		\$ 351,560	\$ 234,373	\$ -	\$ 351,560	\$ 234,373	\$ 585,933
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 820,306	\$ 546,870	\$ -	\$ 820,306	\$ 546,870	\$ 1,367,176
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,953,109		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 585,933		\$ -	\$ 585,933	\$ -	\$ 585,933
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 247,533	\$ -	\$ -	\$ 247,533	\$ 247,533
4.16	Legal Fees (Real estate)	1.00	LS		-	7,425.99	\$ -	\$ -	\$ 7,426	\$ 7,426
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,920,000	\$ -	\$ -	\$ 6,920,000	\$ 6,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 83,180,791.58			\$ 7,386,454	\$ -	\$ -	\$ 7,386,454
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 195,311	\$ -	\$ -	\$ 195,311	\$ 195,311
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)
EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV

	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 170,749,328	\$ 149,849,551	\$ 99,574,291	\$ 420,173,170
2. TRANSITION STATION	\$ 1,367,680	\$ 1,706,372	\$ 1,640,135	\$ 4,714,187
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 19,395,170	\$ 62,117,544	\$ 20,312,816	\$ 101,825,530
SUBTOTAL (Costs):	\$ 191,512,178	\$ 213,673,467	\$ 121,527,241	\$ 526,712,886
CONTRACTOR MARK-UP (OH&P)	\$ 34,472,192	\$ 38,461,224	\$ 21,874,903	\$ 94,808,320
SUBTOTAL:	\$ 225,984,370	\$ 252,134,691	\$ 143,402,144	\$ 621,521,206
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ 124,304,241
TOTAL:	\$ 225,984,370	\$ 252,134,691	\$ 143,402,144	\$ 745,825,447

Comp17 NR-HH Landing 345KV Sea

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000
2.23	Ground Rod, 3/4" x 15'	54	EA	135.00	67.50	7.50	\$ 7,290	\$ 3,645	\$ 405	\$ 11,340
2.24	Trench Box Shoring (Vault)	12	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 216,949	\$ 325,424	\$ 542,373
2.25	Splice Vault Excavation	7,765	CY		\$ 17.5	\$ 7.5	\$ -	\$ 135,893	\$ 58,240	\$ 194,133
2.26	Splice Vault Supply & Installation	12	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 546,000	\$ 257,400	\$ 600,600	\$ 1,404,000
2.27	Splice Vault Backfill	2,330	CY		\$ 14.0	\$ 6.0	\$ -	\$ 32,614	\$ 13,978	\$ 46,592
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	7,066	CY		\$ 24.5	\$ 10.5	\$ -	\$ 173,128	\$ 74,198	\$ 247,326
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	12	EA			\$ 4,000	\$ -	\$ -	\$ 48,000	\$ 48,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	7,765	CF		\$ 1.0	\$ 0.5	\$ -	\$ 7,765	\$ 3,883	\$ 11,648
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 1,367,680	\$ 1,706,372	\$ 1,640,135	\$ 4,714,187
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 172,117,008	\$ 151,555,924	\$ 101,214,425	\$ 424,887,357
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		4,248,873.57		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		16,995,494.27		\$ -	\$ 16,995,494	\$ -	\$ 16,995,494
3.4	Utility PM and Project Oversight	1	LS		4,248,873.57		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.5	Site Accommodation, Facilities, Storage	1	LS	4,248,873.57			\$ 4,248,874	\$ -	\$ -	\$ 4,248,874
	Engineering									
3.6	Design Engineering	1	LS		\$ 21,244,368		\$ -	\$ 21,244,368	\$ -	\$ 21,244,368
3.7	Surveying/Staking	1	LS		\$ 2,974,211		\$ -	\$ 2,974,211	\$ -	\$ 2,974,211
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 4,248,874		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 1,274,662		\$ -	\$ 1,274,662	\$ -	\$ 1,274,662
3.13	Laydown Lease	1	LS		\$ -	\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 868,559	\$ -	\$ -	\$ 868,559	\$ 868,559
3.15	Legal Fees (Real estate)	1.00	LS		-	26,056.77	\$ -	\$ -	\$ 26,057	\$ 26,057
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.18	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.19	Sales Tax on Materials	8.8%	LS	\$ 172,117,008			\$ 15,146,297	\$ -	\$ -	\$ 15,146,297
3.20	Contractor Permits	1	LS		\$ 424,887		\$ -	\$ 424,887	\$ -	\$ 424,887
3.21	Payment & Performance Bond	1	LS			\$ 14,900,000	\$ -	\$ -	\$ 14,900,000	\$ 14,900,000
3.22	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 19,395,170	\$ 62,117,544	\$ 20,312,816	\$ 101,825,530

<p align="center"><u>NEXtera Energy- TO36 Core 1</u></p> <p align="center"><u>Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits</u></p> <p align="center"><u>(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)</u></p>	
Total:	\$ 385,634,343

	Total:	\$ 385,634,343
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NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,553,664	\$ 12,590,558	\$ 5,026,706	\$ 20,170,928
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 32,756,973	\$ 23,529,781	\$ 14,478,636	\$ 70,765,391
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 63,187,504	\$ 38,177,910	\$ 24,731,740	\$ 126,097,154
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,916,970	\$ 33,123,408	\$ 11,266,787	\$ 55,307,165
SUBTOTAL (Costs):	\$ 109,415,111	\$ 107,421,657	\$ 55,503,869	\$ 272,340,638
CONTRACTOR MARK-UP (OH&P)	\$ 19,694,720	\$ 19,335,898	\$ 9,990,696	\$ 49,021,315
SUBTOTAL:	\$ 129,109,831	\$ 126,757,556	\$ 65,494,565	\$ 321,361,952
CONTINGENCY ON ENTIRE PROJECT	\$ 25,821,966	\$ 25,351,511	\$ 13,098,913	\$ 64,272,390
TOTAL:	\$ 154,931,797	\$ 152,109,067	\$ 78,593,479	\$ 385,634,343

Description of Work: East Garden City - Hempstead Harbor Landing (Shore Road, double circuits). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,147,000	\$ 3,063,000	\$ 10,210,000
1.3	Flaggers	330	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 528,000	\$ 1,584,000	\$ 528,000	\$ 2,640,000
1.4	K Rail / Lane Control / Metal Plates	53,909	LF	\$ 30	\$ 18	\$ 12	\$ 1,617,264	\$ 970,358	\$ 646,906	\$ 3,234,528
1.5	Police Support	13,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,584,000	\$ 356,400	\$ 1,940,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 408,400	\$ 1,225,200	\$ 408,400	\$ 2,042,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,553,664	\$ 12,590,558	\$ 5,026,706	\$ 20,170,928
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-DW -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	10.21	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,427,358	\$ 951,572	\$ 2,378,930
2.2	Formwork in Trench	431,270	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 862,541	\$ 646,906	\$ 215,635	\$ 1,725,082
2.3	Trench Excavation	67,885	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,187,990	\$ 509,139	\$ 1,697,129
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,243	CY	\$ 50	\$ 25	\$ 14	\$ 212,141	\$ 103,949	\$ 59,400	\$ 375,490
2.5	Supply & Install Thermal Backfill -conduit level	35,640	CY	\$ 350	\$ 245	\$ 105	\$ 12,473,897	\$ 8,731,728	\$ 3,742,169	\$ 24,947,795
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,604	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,320,782	\$ 2,075,489	\$ 830,196	\$ 6,226,466
2.8	Conduit 8" SCH 40PVC	431,270	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,334,333	\$ 2,445,303	\$ 1,047,987	\$ 15,827,624
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	215,635	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 759,036	\$ 679,251	\$ 291,108	\$ 1,729,394
2.11	Warning Tape	53,909	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,086	\$ 5,391	\$ 5,391	\$ 26,954
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.13	Splice Vault Excavation	9,973	CY		\$ 17.5	\$ 7.5	\$ -	\$ 174,533	\$ 74,800	\$ 249,333
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000
2.15	Splice Vault Backfill	2,992	CY		\$ 14.0	\$ 6.0	\$ -	\$ 41,888	\$ 17,952	\$ 59,840
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	646,906	LF			\$ 0.25	\$ -	\$ -	\$ 161,726	\$ 161,726
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	33,940	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 475,162	\$ 475,162	\$ 237,581	\$ 1,187,905
2.21	PVMT, AGGREGATE, 10", BASE COURSE	9,428	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 210,994	\$ 221,544	\$ 94,948	\$ 527,486
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	166	EA		\$ 400	\$ 1,200	\$ -	\$ 66,416	\$ 199,247	\$ 265,663
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	166	EA		\$ 10	\$ 15	\$ -	\$ 1,660	\$ 2,491	\$ 4,151
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	356	EA		\$ 400	\$ 1,200	\$ -	\$ 142,559	\$ 427,676	\$ 570,235
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 557,466	\$ 371,644	\$ -	\$ 557,466	\$ 371,644	\$ 929,110
2.24	Excess Materials Disposal to Certified Backfill	97,326	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,384,498	\$ 1,021,928	\$ 3,406,425
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	77,858	CF		\$ 1.0	\$ 0.5	\$ -	\$ 77,858	\$ 38,929	\$ 116,788
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 32,756,973	\$ 23,529,781	\$ 14,478,636	\$ 70,765,391
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	113,208	FT	\$ 7	\$ 3	\$ 2	\$ 837,403	\$ 377,052	\$ 251,368	\$ 1,465,823
3.12	Ground Continuity Conductor	113,208	FT	\$ 13	\$ 8	\$ 5	\$ 1,476,125	\$ 852,120	\$ 568,080	\$ 2,896,326
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 63,187,504	\$ 38,177,910	\$ 24,731,740	\$ 126,097,154
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345kV)							\$ 98,498,141	\$ 74,298,250	\$ 44,237,082	\$ 217,033,473
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,556,060	\$ 2,370,707	\$ -	\$ 3,556,060	\$ 2,370,707	\$ 5,926,767
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,170,334.73		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		8,681,338.90		\$ -	\$ 8,681,339	\$ -	\$ 8,681,339
4.4	Utility PM and Project Oversight	1	LS		2,170,334.73		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.5	Site Accommodation, Facilities, Storage	1	LS	2,170,334.73			\$ 2,170,335	\$ -	\$ -	\$ 2,170,335
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,851,674	\$ -	\$ -	\$ 10,851,674	\$ -	\$ 10,851,674
4.7	LiDAR /GPR	1.0	LS		\$ 390,660	\$ 260,440	\$ -	\$ 390,660	\$ 260,440	\$ 651,100
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 911,541	\$ 607,694	\$ -	\$ 911,541	\$ 607,694	\$ 1,519,234
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,170,335		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 651,100		\$ -	\$ 651,100	\$ -	\$ 651,100
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 88,246	\$ -	\$ -	\$ 88,246	\$ 88,246
4.16	Legal Fees (Real estate)	1.00	LS		-	2,647.38	\$ -	\$ -	\$ 2,647	\$ 2,647
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,700,000	\$ -	\$ -	\$ 7,700,000	\$ 7,700,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 98,498,141.33			\$ 8,746,635	\$ -	\$ -	\$ 8,746,635

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 217,033	\$ -	\$ -	\$ 217,033	\$ 217,033
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,916,970	\$ 33,123,408	\$ 11,266,787	\$ 55,307,165

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LiDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 43,680	\$ 29,120	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXtera Energy- TO36 Core 1

Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits

Total: \$ 133,317,472

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576
SUBTOTAL (Costs):	\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757
CONTRACTOR MARK-UP (OH&P)	\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136
SUBTOTAL:	\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893
CONTINGENCY ON ENTIRE PROJECT	\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579
TOTAL:	\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472

Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversight	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LiDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXTera Energy- TO36 Core 1

Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXTera Energy- TO36 Core 1

Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXTera Energy- TO36 Core 1

Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,216
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Graden City To Valley Stream 345kv Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY	\$	\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10" , BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	\$ -	\$ 1,492	\$ 2,239	\$ 3,731
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LiDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Comp13A Syosset-OW 138kv UG

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LIDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Comp13B Syosset-GL 138kv UG

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO36 Core 1

Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit

Total: \$ 232,454,478

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126
SUBTOTAL (Costs):	\$ 59,773,498	\$ 69,663,101	\$ 34,726,168	\$ 164,162,767
CONTRACTOR MARK-UP (OH&P)	\$ 10,759,230	\$ 12,539,358	\$ 6,250,710	\$ 29,549,298
SUBTOTAL:	\$ 70,532,728	\$ 82,202,459	\$ 40,976,879	\$ 193,712,065
CONTINGENCY ON ENTIRE PROJECT	\$ 14,106,546	\$ 16,440,492	\$ 8,195,376	\$ 38,742,413
TOTAL:	\$ 84,639,274	\$ 98,642,950	\$ 49,172,254	\$ 232,454,478

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.59	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	480,266	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 960,531	\$ 720,398	\$ 240,133	\$ 1,921,062
2.3	Trench Excavation	40,022	CY		\$ 17.5	\$ 7.5	\$ -	\$ 700,387	\$ 300,166	\$ 1,000,553
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,501	SF	\$ 50	\$ 25	\$ 14	\$ 125,069	\$ 61,284	\$ 35,019	\$ 221,372
2.5	Supply & Install Thermal Backfill	21,012	CY	\$ 350	\$ 245	\$ 105	\$ 7,354,067	\$ 5,147,847	\$ 2,206,220	\$ 14,708,134
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,782	CY	\$ 200	\$ 125	\$ 50	\$ 1,956,415	\$ 1,222,760	\$ 489,104	\$ 3,668,279
2.9	Conduit 8" SCH 40PVC	244,781	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 7,000,731	\$ 1,387,907	\$ 594,817	\$ 8,983,455
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	122,390	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 430,814	\$ 385,530	\$ 165,227	\$ 981,571
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 12,239	\$ 6,195	\$ 31,195
2.13	Trench Box Shoring (Vault)	38	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 687,006	\$ 1,030,508	\$ 1,717,514
2.14	Splice Vault Excavation	5,202	CY		\$ 17.5	\$ 7.5	\$ -	\$ 91,031	\$ 39,013	\$ 130,044
2.15	Splice Vault Supply & Installation	38	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,330,000	\$ 627,000	\$ 1,463,000	\$ 3,420,000
2.16	Splice Vault Backfill	1,561	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,847	\$ 9,363	\$ 31,211
2.17	Jack and Bore along Route	250	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 200,000	\$ 400,000	\$ 400,000	\$ 1,000,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	367,171	LF			\$ 0.25	\$ -	\$ -	\$ 91,793	\$ 91,793
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	22,979	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 321,707	\$ 321,707	\$ 160,854	\$ 804,269
2.21	PVMT, AGGREGATE, 10" , BASE COURSE	6,383	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 142,853	\$ 149,996	\$ 64,284	\$ 357,134
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	98	EA		\$ 400	\$ 1,200	\$ -	\$ 39,128	\$ 117,385	\$ 156,513
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	98	EA		\$ 10	\$ 15	\$ -	\$ 978	\$ 1,467	\$ 2,446
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	210	EA		\$ 400	\$ 1,200	\$ -	\$ 84,046	\$ 252,139	\$ 336,186
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	56,762	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,390,679	\$ 596,005	\$ 1,986,684
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	38	EA			\$ 4,000	\$ -	\$ -	\$ 152,000	\$ 152,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	45,224	CF		\$ 1.0	\$ 0.5	\$ -	\$ 45,224	\$ 22,612	\$ 67,836
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	114	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 672,372	\$ 1,122,499	\$ 320,714	\$ 2,115,585
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	38	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 1,013,042	\$ 607,825	\$ 405,217	\$ 2,026,084
3.11	Fiber Optic Cable	64,255	FT	\$ 7	\$ 3	\$ 2	\$ 475,294	\$ 214,008	\$ 142,672	\$ 831,973
3.12	Ground Continuity Conductor	64,255	FT	\$ 13	\$ 8	\$ 5	\$ 837,820	\$ 483,647	\$ 322,431	\$ 1,643,899
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 53,699,423	\$ 48,982,817	\$ 27,874,401	\$ 130,556,641
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,305,717	\$ 1,537,144	\$ -	\$ 2,305,717	\$ 1,537,144	\$ 3,842,861
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.3	Construction Project Management / Supervision	1	LS		5,222,265.65		\$ -	\$ 5,222,266	\$ -	\$ 5,222,266
4.4	Utility PM and Project Oversight	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.5	Site Accommodation, Facilities, Storage	1	LS	1,305,566.41			\$ 1,305,566	\$ -	\$ -	\$ 1,305,566
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,527,832	\$ -	\$ -	\$ 6,527,832	\$ -	\$ 6,527,832
4.7	LiDAR /GPR	1.0	LS		\$ 235,002	\$ 156,668	\$ -	\$ 235,002	\$ 156,668	\$ 391,670
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 548,338	\$ 365,559	\$ -	\$ 548,338	\$ 365,559	\$ 913,896
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,305,566		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 391,670		\$ -	\$ 391,670	\$ -	\$ 391,670
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,640,000	\$ -	\$ -	\$ 4,640,000	\$ 4,640,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 53,699,423.07			\$ 4,768,509	\$ -	\$ -	\$ 4,768,509
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 130,557	\$ -	\$ -	\$ 130,557	\$ 130,557
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126

Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit

Total: \$ 5,354,910

NEXtera Energy- TO36 Core 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351
SUBTOTAL (Costs):	\$ 1,083,440	\$ 2,001,924	\$ 696,353	\$ 3,781,716
CONTRACTOR MARK-UP (OH&P)	\$ 195,019	\$ 360,346	\$ 125,343	\$ 680,709
SUBTOTAL:	\$ 1,278,459	\$ 2,362,270	\$ 821,696	\$ 4,462,425
CONTINGENCY ON ENTIRE PROJECT	\$ 255,692	\$ 472,454	\$ 164,339	\$ 892,485
TOTAL:	\$ 1,534,151	\$ 2,834,724	\$ 986,035	\$ 5,354,910

Description of Work: Rebuild 0.2 mile of UG line (trench, conduits and cable), single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.20	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	1,056	LF	\$ 30	\$ 18	\$ 12	\$ 31,680	\$ 19,008	\$ 12,672	\$ 63,360
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	0.20	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 8,000	\$ 24,000	\$ 8,000	\$ 40,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.20	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 27,960	\$ 18,640	\$ 46,600
2.2	Formwork in Trench	8,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 16,512	\$ 12,384	\$ 4,128	\$ 33,024
2.3	Trench Excavation	688	CY		\$ 17.5	\$ 7.5	\$ -	\$ 12,040	\$ 5,160	\$ 17,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	43	SF	\$ 50	\$ 25	\$ 14	\$ 2,150	\$ 1,054	\$ 602	\$ 3,806
2.5	Supply & Install Thermal Backfill	361	CY	\$ 350	\$ 245	\$ 105	\$ 126,420	\$ 88,494	\$ 37,926	\$ 252,840
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	168	CY	\$ 200	\$ 125	\$ 50	\$ 33,632	\$ 21,020	\$ 8,408	\$ 63,060
2.9	Conduit 8" SCH 40PVC	4,224	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 120,806	\$ 23,950	\$ 10,264	\$ 155,021
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	2,112	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 7,434	\$ 6,653	\$ 2,851	\$ 16,938
2.12	Warning Tape	2,112	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 317	\$ 528	\$ 211	\$ 1,056
2.13	Trench Box Shoring (Vault)	1	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 18,079	\$ 27,119	\$ 45,198
2.14	Splice Vault Excavation	137	CY		\$ 17.5	\$ 7.5	\$ -	\$ 2,396	\$ 1,027	\$ 3,422
2.15	Splice Vault Supply & Installation	1	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 35,000	\$ 16,500	\$ 38,500	\$ 90,000
2.16	Splice Vault Backfill	41	CY		\$ 14.0	\$ 6.0	\$ -	\$ 575	\$ 246	\$ 821
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	6,336	LF			\$ 0.25	\$ -	\$ -	\$ 1,584	\$ 1,584
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 5,696	\$ 5,696	\$ 2,848	\$ 14,241
2.21	PVMT, AGGREGATE, 10", BASE COURSE	113	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 2,529	\$ 2,656	\$ 1,138	\$ 6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$ 400	\$ 1,200	\$ -	\$ 673	\$ 2,018	\$ 2,691
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$ 10	\$ 15	\$ -	\$ 17	\$ 25	\$ 42
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LiDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

NEXtera Energy- TO36 Core 1

Other Comp. 138kV Upgrades

Total: \$ 16,870,335

Other Comp. 138kV Upgrades					
	Material Supply	Labor Supply	Equip Supply	Total	
Other Comp. 138kV Upgrades					
1. West Bus-Kings CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700	
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000	
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000	
	\$ -	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	\$ -	
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378	
CONTRACTOR MARK-UP (OH&P)	\$ 829,380	\$ 872,432	\$ 442,722	\$ 2,144,534	
SUBTOTAL:	\$ 5,437,050	\$ 5,719,276	\$ 2,902,287	\$ 14,058,612	
CONTINGENCY ON ENTIRE PROJECT	\$ 1,087,410	\$ 1,143,855	\$ 580,457	\$ 2,811,722	
TOTAL:	\$ 6,524,459	\$ 6,863,131	\$ 3,482,744	\$ 16,870,335	

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1. West Bus-Kings CT Upgrade										
1.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
1.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
1.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
							\$ -	from	\$ -	\$ -
TOTAL - West Bus-Kings-Pligrim CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,155,935.10	\$ 2,096,798.80	\$ 2,015,966.10	\$ 8,268,700.00
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.1	Mob / Demob	1.0	LS		\$ 123,383	\$ 82,255	\$ -	\$ 123,383	\$ 82,255	\$ 205,638
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.3	Construction Project Management / Supervision	1	LS		330,748.00		\$ -	\$ 330,748	\$ -	\$ 330,748
4.4	Utility PM and Project Oversight	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.5	Site Accommodation, Facilities, Storage	1	LS	82,687.00			\$ 82,687	\$ -	\$ -	\$ 82,687
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 413,435	\$ -	\$ -	\$ 413,435	\$ -	\$ 413,435
4.7	LiDAR	1.00	LS		\$ 14,884	\$ 9,922	\$ -	\$ 14,884	\$ 9,922	\$ 24,806
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,729	\$ 23,152	\$ -	\$ 34,729	\$ 23,152	\$ 57,881
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,687		\$ -	\$ 82,687	\$ -	\$ 82,687
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,806		\$ -	\$ 24,806	\$ -	\$ 24,806
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 320,000	\$ -	\$ -	\$ 320,000	\$ 320,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,155,935.10			\$ 369,047	\$ -	\$ -	\$ 369,047
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,269	\$ -	\$ -	\$ 8,269	\$ 8,269
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378

NEXtera Energy- TO36 Core 1	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO36 estimating workbook includes the substation and transmission line components listed to the right.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 _Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contracct value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable,
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
42	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 3 circuits, 2 cable per circuit, so there are 6 passes.
43	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications -	
44	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
45	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
46	Substation pad is based on 8" base and 6" surfacing rock.
47	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
48	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
49	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
50	All substation segments construction period is based on milestone schedule provided

NEXtera Energy- TO37 Core 2		
REVISION 1		
NEXtera Energy- TO37 Core 2 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 71,756,341
Direct Labor, Material & Equipment Costs	2.Station 252 East Garden City 345/138 kV Substation Upgrades	\$ 139,780,270
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,095,138
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 322,019,268
Direct Labor, Material & Equipment Costs	12. Farragut 345kV Substation Expansion	\$ 67,975,498
Direct Labor, Material & Equipment Costs	13. Existing Ruland Road 138 kV Substation Upgrade	\$ 1,077,395
Direct Labor, Material & Equipment Costs	14. Existing East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 867,921,158
CONTRACTOR MARK-UP (OH&P)		\$ 139,460,608
SUBTOTAL (AFTER MU):		\$ 1,007,381,766
CONTINGENCY ON ENTIRE PROJECT		\$ 201,476,353
Substation TOTAL:		\$ 1,208,858,120
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 195,310,866
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 424,887,357
Direct Labor, Material & Equipment Costs	Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)	\$ 217,033,473
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit(EGC-Farragut 345kv)	\$ 131,952,439
Direct Labor, Material & Equipment Costs	Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$ 235,289,469
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 8,268,700
SUBTOTAL (Costs):		\$ 1,844,044,680
CONTRACTOR MARK-UP (OH&P)		\$ 331,928,042
SUBTOTAL (AFTER MU):		\$ 2,175,972,723
CONTINGENCY ON ENTIRE PROJECT		\$ 435,194,545
Transmission Line TOTAL:		\$ 2,611,167,267
NEXtera Energy- TO37 Core 2Total Direct Cost		\$ 3,820,025,387

NEXtera Energy- TO37 Core 2 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 21,452,240
Indirect Costs	2.Station 252 East Garden City 345/138 kV Substation Upgrades	\$ 69,937,132
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 334,752
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 99,114,306
Indirect Costs	12. Farragut 345kV Substation Expansion	\$ 18,896,969
Indirect Costs	13. Existing Ruland Road 138 kV Substation Upgrade	\$ 356,246
Indirect Costs	14. Existing East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 287,227,934
CONTRACTOR MARK-UP (OH&P)		\$ 51,701,028
SUBTOTAL (AFTER MU):		\$ 338,928,962
CONTINGENCY ON ENTIRE PROJECT		\$ 67,785,792
Substation TOTAL:		\$ 406,714,755
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 49,373,632
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 101,825,530
Indirect Costs	Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)	\$ 55,307,165
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 50,420,274
Indirect Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit(EGC-Farragut 345kv)	\$ 34,205,384
Indirect Costs	Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$ 59,676,335
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,645,378
SUBTOTAL (Costs):		\$ 465,382,484
CONTRACTOR MARK-UP (OH&P)		\$ 83,768,847
SUBTOTAL (AFTER MU):		\$ 549,151,332
CONTINGENCY ON ENTIRE PROJECT		\$ 109,830,266
Transmission Line TOTAL:		\$ 658,981,598
NEXtera Energy- TO37 Core 2 Total Indirect Cost		\$ 1,065,696,353
NEXtera Energy- TO37 Core 2 Total		\$ 4,885,721,740

NEXTera Energy- TO37 Core 2

1. Station 29 New Ruland Road 345/138 kV Substation

Total: \$ 130,328,792

NEXTera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,525,983	\$ 1,300,112	\$ 762,874	\$ 3,588,968
2. SUBSTATION FOUNDATIONS	\$ 2,268,952	\$ 2,565,809	\$ 1,604,887	\$ 6,439,648
3. SUBSTATION STRUCTURES	\$ 1,003,878	\$ 883,987	\$ 531,389	\$ 2,419,254
4. MAJOR EQUIPMENT	\$ 33,974,138	\$ 6,680,324	\$ 4,252,876	\$ 44,907,338
5. LOW VOLTAGE & CONTROL CABLE	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH	\$ 3,830,653	\$ 2,117,722	\$ 1,141,383	\$ 7,089,758
7. GROUND GRID	\$ 197,725	\$ 142,339	\$ 33,060	\$ 373,123
8. CONTROL ENCLOSURE	\$ 3,191,085	\$ 2,611,419	\$ 973,666	\$ 6,776,170
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,660,765	\$ 12,690,935	\$ 4,100,541	\$ 21,452,240
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 45,030,551	\$ 25,578,737	\$ 11,109,293	\$ 81,718,582
SUBTOTAL (Costs):	\$ 50,775,551	\$ 29,025,737	\$ 13,407,293	\$ 93,208,582
CONTRACTOR MARK-UP (OH&P)	\$ 8,450,199	\$ 4,810,993	\$ 2,137,553	\$ 15,398,745
SUBTOTAL:	\$ 59,225,750	\$ 33,836,730	\$ 15,544,846	\$ 108,607,326
CONTINGENCY ON ENTIRE PROJECT	\$ 11,845,150	\$ 6,767,346	\$ 3,108,969	\$ 21,721,465
TOTAL:	\$ 71,070,900	\$ 40,604,076	\$ 18,653,815	\$ 130,328,792

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, and modification at exisitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1. Station 29 New Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 48,600	\$ 32,400	\$ 81,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,895	SY	4.85	7.20	4.80	\$ 18,890	\$ 28,042	\$ 18,695	\$ 65,627
1.4	Strip and Dispose Top Soil	7,260	CY		24.50	10.50	\$ -	\$ 177,870	\$ 76,230	\$ 254,100
1.5	Site Grading- Excavation for Substation Pad	21,780	CY		9.00	6.00	\$ -	\$ 196,020	\$ 130,680	\$ 326,700
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	11,761	CY		21.00	9.00	\$ -	\$ 246,985.20	\$ 105,850.80	\$ 352,836.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	17,642	CY		2.40	1.60	\$ -	\$ 42,340	\$ 28,227	\$ 70,567
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	11,761	CY	25.00	2.40	1.60	\$ 294,030	\$ 28,227	\$ 18,818	\$ 341,075
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,710	LF	13.85	13.85	6.92	\$ 23,680	\$ 23,680	\$ 11,840	\$ 59,200
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	15,000	SF	1.50	1.50	1.00	\$ 22,500	\$ 22,500	\$ 15,000	\$ 60,000
1.17	Erosion Control-Silt fence install & remove	2,700	LF	2.41	3.16	0.72	\$ 6,507	\$ 8,532	\$ 1,944	\$ 16,983
1.18	Temporary fencing	1,800	LF	7.50	5.25	2.25	\$ 13,500	\$ 9,450	\$ 4,050	\$ 27,000
1.19	Substation entrance with asphalt	4,500	SY	19.50	26.00	19.50	\$ 87,750	\$ 117,000	\$ 87,750	\$ 292,500
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,525,983	\$ 1,300,112	\$ 762,874	\$ 3,588,968
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	127	CY	703.89	804.44	502.78	\$ 89,196	\$ 101,939	\$ 63,712	\$ 254,847
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	230	CY	703.89	804.44	502.78	\$ 161,668	\$ 184,764	\$ 115,477	\$ 461,909
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
=3*3	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
11	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.31	Precast Firewall for transformer, PARs, reactors	2,010	SF	25.00	15.00	10.00	\$ 50,250	\$ 30,150	\$ 20,100	\$ 100,500
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 2,268,952	\$ 2,565,809	\$ 1,604,887	\$ 6,439,648
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	29	EA	4,810.00	2,886.00	1,924.00	\$ 139,490	\$ 83,694	\$ 55,796	\$ 278,980
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	8	EA	19,240.00	11,544.00	7,696.00	\$ 153,920	\$ 92,352	\$ 61,568	\$ 307,840
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80	1,950	LF	25.00	184.94	123.29	\$ 48,750	\$ 360,629	\$ 240,419	\$ 649,799
3.23	AL. Bus fittings	1	LS	58,500.00	58,500.00	29,250.00	\$ 58,500	\$ 58,500	\$ 29,250	\$ 146,250
3.24	Steel grating and support beams-transformer moat	173,120	LB	2.73	1.17	0.50	\$ 472,932	\$ 202,377	\$ 86,733	\$ 762,043

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,003,878	\$ 883,987	\$ 531,389	\$ 2,419,254
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	8	EA	57,720.00	34,632.00	23,088.00	\$ 461,760	\$ 277,056	\$ 184,704	\$ 923,520
4.6	345/138KV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800
4.7	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	12,882,000.00	3,520.00	880.00	\$ 12,882,000	\$ 3,520	\$ 880	\$ 12,886,400
4.10	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.12	345kV, Circuit Breaker (PASS)	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.19	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 33,974,138	\$ 6,680,324	\$ 4,252,876	\$ 44,907,338
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	23,100	LF	5.30	1.43	0.29	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,500	LF	11.15	10.80	5.40	\$ 50,175	\$ 48,600	\$ 24,300	\$ 123,075
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.11	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.12	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,830,653	\$ 2,117,722	\$ 1,141,383	\$ 7,089,758
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	20,055	LF	2.09	3.42	1.46	\$ 41,935	\$ 68,494	\$ 29,355	\$ 139,783
7.2	Caweld, DSA, 4/0 , T, CROSS	540	EA	165.00	75.00		\$ 89,100	\$ 40,500	\$ -	\$ 129,600
7.3	Ground Rod, 3/4" x 15'	494	EA	135.00	67.50	7.50	\$ 66,690	\$ 33,345	\$ 3,705	\$ 103,740
TOTAL - GROUND GRID							\$ 197,725	\$ 142,339	\$ 33,060	\$ 373,123
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Anr	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.15	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,191,085	\$ 2,611,419	\$ 973,666	\$ 6,776,170
1. Station 29 New Ruland Road 345/138 kV Substation							\$ 46,114,786	\$ 16,334,802	\$ 9,306,753	\$ 71,756,341
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		696,379.43	298,448.33	\$ -	\$ 696,379	\$ 298,448	\$ 994,828
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,410,653.65		\$ -	\$ 2,410,654	\$ -	\$ 2,410,654
9.4	Utility PM and Project Oversight	1	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.5	Site Accommodation, Facilities, Storage	1	LS	602,663.41			\$ 602,663	\$ -	\$ -	\$ 602,663
	Engineering									
9.6	Design Engineering	1.00	LS		4,821,307.30		\$ -	\$ 4,821,307	\$ -	\$ 4,821,307
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		421,864.39		\$ -	\$ 421,864	\$ -	\$ 421,864
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,259,987.80		\$ -	\$ 2,259,988	\$ -	\$ 2,259,988
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		180,799.02		\$ -	\$ 180,799	\$ -	\$ 180,799
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,600,000	\$ -	\$ -	\$ 2,600,000	\$ 2,600,000
9.20	Sales Tax on Materials	8.80%	LS	46,114,786.29			\$ 4,058,101	\$ -	\$ -	\$ 4,058,101
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		71,756.34		\$ -	\$ 71,756	\$ -	\$ 71,756
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,660,765	\$ 12,690,935	\$ 4,100,541	\$ 21,452,240

NEXTera Energy- TO37 Core 2

2.Station 252 East Garden City 345/138 kV Substation Upgrades

Total: \$ 291,888,161

NEXTera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 252 East Garden City 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS	\$ 5,212,427	\$ 5,569,866	\$ 3,498,998	\$ 14,281,290
3. SUBSTATION STRUCTURES	\$ 1,489,759	\$ 898,711	\$ 473,428	\$ 2,861,898
4. MAJOR EQUIPMENT	\$ 63,266,156	\$ 15,540,756	\$ 10,260,204	\$ 89,067,116
5. LOW VOLTAGE & CONTROL CABLE	\$ 104,891	\$ 28,364	\$ 5,673	\$ 138,927
6. CONDUIT & CABLE TRENCH	\$ 8,731,398	\$ 4,955,477	\$ 2,712,931	\$ 16,399,807
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE	\$ 5,873,384	\$ 4,447,247	\$ 1,675,137	\$ 11,995,767
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 8,644,368	\$ 22,680,704	\$ 38,612,060	\$ 69,937,132
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 77,383,978	\$ 45,655,157	\$ 51,458,267	\$ 174,497,402
SUBTOTAL (Costs):	\$ 94,993,978	\$ 56,221,157	\$ 58,502,267	\$ 209,717,402
CONTRACTOR MARK-UP (OH&P)	\$ 14,985,716	\$ 8,851,888	\$ 9,685,128	\$ 33,522,732
SUBTOTAL:	\$ 109,979,694	\$ 65,073,045	\$ 68,187,396	\$ 243,240,134
CONTINGENCY ON ENTIRE PROJECT	\$ 21,995,939	\$ 13,014,609	\$ 13,637,479	\$ 48,648,027
TOTAL:	\$ 131,975,633	\$ 78,087,654	\$ 81,824,875	\$ 291,888,161

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at existng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 252 East Garden City 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	166	CY	703.89	804.44	502.78	\$ 116,775	\$ 133,457	\$ 83,410	\$ 333,641
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	54	CY	703.89	804.44	502.78	\$ 37,658	\$ 43,038	\$ 26,898	\$ 107,594
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.14	345kV, Shunt Reactor with oil containment-150MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.16	345kV, Phase Angle Regulator with oil containment	890	CY	703.89	804.44	502.78	\$ 626,458	\$ 715,952	\$ 447,470	\$ 1,789,879
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.20	345kV, Surge arrester	80	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	Firewall Foundation	1,885	CY	703.89	804.44	502.78	\$ 1,326,795	\$ 1,516,337	\$ 947,711	\$ 3,790,843
2.30	Precast Firewall for transformer, PARs, reactors	28,530	SF	25.00	15.00	10.00	\$ 713,250	\$ 427,950	\$ 285,300	\$ 1,426,500
2.31	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.32	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 5,212,427	\$ 5,569,866	\$ 3,498,998	\$ 14,281,290
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	15	EA	8,346.00	5,758.74	3,839.16	\$ 125,190	\$ 86,381	\$ 57,587	\$ 269,159
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	5	EA	8,346.00	5,758.74	3,839.16	\$ 41,730	\$ 28,794	\$ 19,196	\$ 89,720
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,050	LF	25.00	184.94	123.29	\$ 26,250	\$ 194,185	\$ 129,457	\$ 349,892
3.22	AL. Bus fittings	1	LS	31,500.00	31,500.00	15,750.00	\$ 31,500	\$ 31,500	\$ 15,750	\$ 78,750
3.23	Steel grating and support beams-transformer moat	432,800	LB	2.73	1.17	0.50	\$ 1,182,331	\$ 505,943	\$ 216,833	\$ 1,905,107
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,489,759	\$ 898,711	\$ 473,428	\$ 2,861,898

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	15	EA	17,400.00	5,460.00	2,340.00	\$ 261,000	\$ 81,900	\$ 35,100	\$ 378,000
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	3.00	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	2	EA	3,026,425.00	3,520.00	880.00	\$ 6,052,850	\$ 7,040	\$ 1,760	\$ 6,061,650
4.9	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.10	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.11	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.12	Transport & Testing- Reactor	8	EA		424,900.00	279,600.00	\$ -	\$ 3,399,200	\$ 2,236,800	\$ 5,636,000
4.13	345kV, Phase Angle Regulator with oil containment	2	EA	12,882,000.00	3,520.00	880.00	\$ 25,764,000	\$ 7,040	\$ 1,760	\$ 25,772,800
4.14	Transport & Testing- PAR	2	EA		615,400.00	406,600.00	\$ -	\$ 1,230,800	\$ 813,200	\$ 2,044,000
4.15	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.20	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 63,266,156	\$ 15,540,756	\$ 10,260,204	\$ 89,067,116
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	19,800	LF	5.30	1.43	0.29	\$ 104,891	\$ 28,364	\$ 5,673	\$ 138,927
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 104,891	\$ 28,364	\$ 5,673	\$ 138,927
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,050	LF	11.15	10.80	5.40	\$ 45,158	\$ 43,740	\$ 21,870	\$ 110,768
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,731,398	\$ 4,955,477	\$ 2,712,931	\$ 16,399,807
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0 , T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.4	Backup Line Relays (87L): GE L90	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,873,384	\$ 4,447,247	\$ 1,675,137	\$ 11,995,767
2.Station 252 East Garden City 345/138 kV Substation Upgrades							\$ 86,349,610	\$ 33,540,453	\$ 19,890,207	\$ 139,780,270
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,870,073.12	801,459.91	\$ -	\$ 1,870,073	\$ 801,460	\$ 2,671,533
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,045,602.70		\$ -	\$ 1,045,603	\$ -	\$ 1,045,603
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,182,410.80		\$ -	\$ 4,182,411	\$ -	\$ 4,182,411
9.4	Utility PM and Project Oversight	1	LS		1,045,602.70		\$ -	\$ 1,045,603	\$ -	\$ 1,045,603
9.5	Site Accommodation, Facilities, Storage	1	LS	1,045,602.70			\$ 1,045,603	\$ -	\$ -	\$ 1,045,603
	Engineering									
9.6	Design Engineering	1.00	LS		8,364,821.60		\$ -	\$ 8,364,822	\$ -	\$ 8,364,822
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		731,921.89		\$ -	\$ 731,922	\$ -	\$ 731,922
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,921,010.13		\$ -	\$ 3,921,010	\$ -	\$ 3,921,010
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,045,602.70		\$ -	\$ 1,045,603	\$ -	\$ 1,045,603
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		313,680.81		\$ -	\$ 313,681	\$ -	\$ 313,681
9.15	Laydown Lease	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 5,820,000	\$ -	\$ -	\$ 5,820,000	\$ 5,820,000
9.20	Sales Tax on Materials	8.80%	LS	86,349,609.56			\$ 7,598,766	\$ -	\$ -	\$ 7,598,766
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		139,780.27		\$ -	\$ 139,780	\$ -	\$ 139,780
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 8,644,368	\$ 22,680,704	\$ 38,612,060	\$ 69,937,132

NEXTera Energy- TO37 Core 2

3.Station 48 Valley Stream 345/138 kV Substation Upgrades

Total: \$ 143,522,216

NEXTera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPTMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.Station 48 Valley Stream 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	620,000.00	415,000.00	\$ -	\$ 620,000	\$ 415,000	\$ 1,035,000
1.3	New Access Road - 20'	889	SY	4.85	7.20	4.80	\$ 4,312	\$ 6,401	\$ 4,267	\$ 14,980
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	11,761	CY		9.00	6.00	\$ -	\$ 105,849	\$ 70,566	\$ 176,415
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,057	CY		2.40	1.60	\$ -	\$ 16,937	\$ 11,291	\$ 28,228
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,704	CY	25.00	2.40	1.60	\$ 117,600	\$ 11,290	\$ 7,526	\$ 136,416
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,712	SY	11.00	6.00	4.00	\$ 95,832	\$ 52,272	\$ 34,848	\$ 182,952
1.11	Site Surfacing - Aggregate 6" Thick	8,712	SY	16.50	4.50	3.00	\$ 143,748	\$ 39,204	\$ 26,136	\$ 209,088
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,222	LF	13.85	13.85	6.92	\$ 30,770	\$ 30,770	\$ 15,385	\$ 76,926
1.13	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
1.14	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,583	LF	2.41	3.16	0.72	\$ 6,225	\$ 8,162	\$ 1,860	\$ 16,247
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	333	SY	19.50	26.00	19.50	\$ 6,500	\$ 8,667	\$ 6,500	\$ 21,667
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

<u>NEXTera Energy- TO37 Core 2</u>	
<u>4.Barrett 138 kV Substation Upgrades</u>	
Total:	\$ 77,248,534

Total: \$ 77,248,534

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
4.Barrett 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS	\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES	\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT	\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID	\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE	\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 22,313,583	\$ 13,117,388	\$ 8,801,554	\$ 44,232,524
SUBTOTAL (Costs):	\$ 28,058,583	\$ 16,564,388	\$ 11,099,554	\$ 55,722,524
CONTRACTOR MARK-UP (OH&P)	\$ 4,361,145	\$ 2,567,950	\$ 1,722,160	\$ 8,651,254
SUBTOTAL:	\$ 32,419,728	\$ 19,132,338	\$ 12,821,713	\$ 64,373,779
CONTINGENCY ON ENTIRE PROJECT	\$ 6,483,946	\$ 3,826,468	\$ 2,564,343	\$ 12,874,756
TOTAL:	\$ 38,903,673	\$ 22,958,805	\$ 15,386,056	\$ 77,248,534

Description of Work: Construct a new Barrett 138kV GIS substation adjacent to the existing Barrett 138kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 23,760	\$ 15,840	\$ 39,600
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,115	SY	4.85	7.20	4.80	\$ 10,257	\$ 15,227	\$ 10,151	\$ 35,636
1.4	Strip and Dispose Top Soil	3,549	CY		24.50	10.50	\$ -	\$ 86,959	\$ 37,268	\$ 124,227
1.5	Site Grading- Excavation for Substation Pad	10,648	CY		9.00	6.00	\$ -	\$ 95,832	\$ 63,888	\$ 159,720
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	5,750	CY		21.00	9.00	\$ -	\$ 120,748.32	\$ 51,749.28	\$ 172,497.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	8,625	CY		2.40	1.60	\$ -	\$ 20,700	\$ 13,800	\$ 34,500
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	5,750	CY	25.00	2.40	1.60	\$ 143,748	\$ 13,800	\$ 9,200	\$ 166,748
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	10,648	SY	11.00	6.00	4.00	\$ 117,128	\$ 63,888	\$ 42,592	\$ 223,608
1.11	Site Surfacing - Aggregate 6" Thick	10,648	SY	16.50	4.50	3.00	\$ 175,692	\$ 47,916	\$ 31,944	\$ 255,552
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,056	LF	13.85	13.85	6.92	\$ 14,623	\$ 14,623	\$ 7,312	\$ 36,559
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	8,896	SF	1.50	1.50	1.00	\$ 13,344	\$ 13,344	\$ 8,896	\$ 35,584
1.17	Erosion Control-Silt fence install & remove	1,620	LF	2.41	3.16	0.72	\$ 3,904	\$ 5,119	\$ 1,166	\$ 10,190
1.18	Temporary fencing	1,080	LF	7.50	5.25	2.25	\$ 8,100	\$ 5,670	\$ 2,430	\$ 16,200
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL. Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
4.28	Transport & Testing- GIL	0	LS		-	-				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
5.Dunwoodie 345 kV GIS Substation							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931
9.4	Utility PM and Project Oversight	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733
	Engineering									
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565

NEXTera Energy- TO37 Core 2
6.Elwood 138 kV Substation Upgrades

NEXTera Energy- TO37 Core 2
6.Elwood 138 kV Substation Upgrades

	NEXtera Energy- TO37 Core 2				
		Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades					
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$	-	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS	\$	88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES	\$	118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT	\$	3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE	\$	15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH	\$	6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$	-	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$	42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$	350,131	\$ 866,723	\$ 170,709	\$ 1,387,563
SUBTOTAL (Costs):	\$	3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$	692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$	4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$	908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$	5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVAr reactor (1 block) at the exisitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVAr)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

NEXTera Energy- TO37 Core 2
7.Jamaica 138 kV Substation Upgrades

NEXtera Energy- TO37 Core 2									
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	Material Supply	Labor Supply	Equip Supply	Total
7.Jamaica 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES	\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT	\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752
SUBTOTAL (Costs):	\$ 658,333	\$ 579,029	\$ 192,528	\$ 1,429,890
CONTRACTOR MARK-UP (OH&P)	\$ 118,500	\$ 104,225	\$ 34,655	\$ 257,380
SUBTOTAL:	\$ 776,832	\$ 683,255	\$ 227,183	\$ 1,687,270
CONTINGENCY ON ENTIRE PROJECT	\$ 155,366	\$ 136,651	\$ 45,437	\$ 337,454
TOTAL:	\$ 932,199	\$ 819,906	\$ 272,620	\$ 2,024,724

Description of Work: Add an additional terminal at the existing Jamaica 138kV substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345/138kV Gas-Insulated Bus Conductor	246	LF	550.00	275.00	82.50	\$ 135,300	\$ 67,650	\$ 20,295	\$ 223,245
4.30	345/138kV Gas-Insulated Bus Conductor-elbow	6	EA	2,500.00	1,250.00	375.00	\$ 15,000	\$ 7,500	\$ 2,250	\$ 24,750
4.31	Transport & Testing- GIL	1	LS		27,054.00	18,036.00	\$ -	\$ 27,054	\$ 18,036	\$ 45,090
TOTAL - MAJOR EQUIPMENT							\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40	600	LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
7.Jamaica 138 kV Substation Upgrades							\$ 595,020	\$ 355,092	\$ 145,026	\$ 1,095,138
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,504.13	7,501.77	\$ -	\$ 17,504	\$ 7,502	\$ 25,006
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,805.51		\$ -	\$ 43,806	\$ -	\$ 43,806
9.4	Utility PM and Project Oversight	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.5	Site Accommodation, Facilities, Storage	1	LS	10,951.38			\$ 10,951	\$ -	\$ -	\$ 10,951
	Engineering									
9.6	Design Engineering	1.00	LS		87,611.01		\$ -	\$ 87,611	\$ -	\$ 87,611
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,665.96		\$ -	\$ 7,666	\$ -	\$ 7,666
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		41,067.66		\$ -	\$ 41,068	\$ -	\$ 41,068
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		10,951.38		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,285.41		\$ -	\$ 3,285	\$ -	\$ 3,285
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	595,019.53			\$ 52,362	\$ -	\$ -	\$ 52,362
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,095.14		\$ -	\$ 1,095	\$ -	\$ 1,095
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752

NEXTera Energy- TO37 Core 2

8.Newbridge 345/138 kV GIS Substation Upgrades

Total: \$ 89,858,233

NEXTera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPTMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION	#REF!									
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
Project Management, Material Handling & Amenities										
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
Engineering										
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
Testing & Commissioning										
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
Permitting and Additional Costs										
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

<u>NEXTera Energy- TO37 Core 2</u>	
<u>9.Rainey 345kV GIS Substation Upgrades</u>	
Total:	\$ 45,946,157

<u>NEXTera Energy- TO37 Core 2</u>	
<u>9.Rainey 345kV GIS Substation Upgrades</u>	
Total:	\$ 45,946,157

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
9.Rainey 345kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID	\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE	\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 8,610,766	\$ 8,924,115	\$ 5,696,359	\$ 23,231,241
SUBTOTAL (Costs):	\$ 13,740,766	\$ 12,002,115	\$ 7,748,359	\$ 33,491,241
CONTRACTOR MARK-UP (OH&P)	\$ 1,857,738	\$ 1,791,021	\$ 1,148,465	\$ 4,797,223
SUBTOTAL:	\$ 15,598,504	\$ 13,793,136	\$ 8,896,824	\$ 38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$ 3,119,701	\$ 2,758,627	\$ 1,779,365	\$ 7,657,693
TOTAL:	\$ 18,718,205	\$ 16,551,763	\$ 10,676,189	\$ 45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.

[illegible]

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
Project Management, Material Handling & Amenities										
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
Engineering										
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
Testing & Commissioning										
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
Permitting and Additional Costs										
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL. Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534
	Engineering									
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

NEXTera Energy- TO37 Core 2

11.Sprain Brook 345kV Substation Expansion

Total: \$ 596,325,142

NEXTera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
11.Sprain Brook 345kV Substation Expansion				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS	\$ 1,920,956	\$ 2,166,878	\$ 1,355,611	\$ 5,443,445
3. SUBSTATION STRUCTURES	\$ 1,075,966	\$ 901,681	\$ 569,078	\$ 2,546,726
4. MAJOR EQUIPTMENT	\$ 10,402,779	\$ 1,823,144	\$ 1,072,736	\$ 13,298,659
5. LOW VOLTAGE & CONTROL CABLE	\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
6. CONDUIT & CABLE TRENCH	\$ 627,979	\$ 194,488	\$ 70,492	\$ 892,959
7. GROUND GRID	\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE	\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,237,695	\$ 73,613,826	\$ 18,262,785	\$ 99,114,306
SUBTOTAL (Costs):-	\$ 52,891,131	\$ 204,429,946	\$ 163,812,498	\$ 421,133,575
CONTRACTOR MARK-UP (OH&P)	\$ 9,520,404	\$ 36,797,390	\$ 29,486,250	\$ 75,804,043
SUBTOTAL:	\$ 62,411,534	\$ 241,227,336	\$ 193,298,748	\$ 496,937,618
CONTINGENCY ON ENTIRE PROJECT	\$ 12,482,307	\$ 48,245,467	\$ 38,659,750	\$ 99,387,524
TOTAL:	\$ 74,893,841	\$ 289,472,804	\$ 231,958,497	\$ 596,325,142

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11.Sprain Brook 345kV Substation Expansion										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.4	ACRE	-	42,000.00	28,000.00	\$ -	\$ 224,902	\$ 149,935	\$ 374,837
1.2	Demolition	1	LS	-	120,000.00	80,000.00	\$ -	\$ 120,000	\$ 80,000	\$ 200,000
1.3	New Access Road - 20'	3,631	SY	4.85	7.20	4.80	\$ 17,611	\$ 26,144	\$ 17,429	\$ 61,184
1.4	Strip and Dispose Top Soil	8,639	CY		24.50	10.50	\$ -	\$ 211,658	\$ 90,711	\$ 302,369
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	56,901	CY		9.00	6.00	\$ -	\$ 512,110	\$ 341,407	\$ 853,517
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	227,604	CY		120.00	180.00	\$ -	\$ 27,312,533	\$ 40,968,800	\$ 68,281,333
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	384,083	CY		21.00	9.00	\$ -	\$ 8,065,732.50	\$ 3,456,742.50	\$ 11,522,475
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	11,380	SY	11.00	6.00	4.00	\$ 125,182	\$ 68,281	\$ 45,521	\$ 238,985
1.12	Site Surfacing - Aggregate 6" Thick	11,380	SY	16.50	4.50	3.00	\$ 187,774	\$ 51,211	\$ 34,141	\$ 273,125
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,300	LF	13.85	13.85	6.92	\$ 18,002	\$ 18,002	\$ 9,001	\$ 45,006
1.14	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.15	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	219,523.20	76,800.00	50,736.00	\$ 219,523	\$ 76,800	\$ 50,736	\$ 347,059
1.17	Seeding	130,834	SF	1.50	1.50	1.00	\$ 196,251	\$ 196,251	\$ 130,834	\$ 523,336
1.18	Erosion Control-Silt fence install & remove	3,900	LF	2.41	3.16	0.72	\$ 9,399	\$ 12,324	\$ 2,808	\$ 24,531
1.19	Temporary fencing	1,430	LF	7.50	5.25	2.25	\$ 10,725	\$ 7,508	\$ 3,218	\$ 21,450
1.20	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Concrete Retaining Wall- Soil excavation	99,073	CY		9.00	6.00	\$ -	\$ 891,661	\$ 594,440	\$ 1,486,101
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.26	Concrete Retaining Walll- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	350	CY	703.89	804.44	502.78	\$ 246,360	\$ 281,554	\$ 175,971	\$ 703,885
2.15	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,920,956	\$ 2,166,878	\$ 1,355,611	\$ 5,443,445
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,075,966	\$ 901,681	\$ 569,078	\$ 2,546,726
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	16	EA	57,720.00	34,632.00	23,088.00	\$ 923,520	\$ 554,112	\$ 369,408	\$ 1,847,040
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,487.50	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.10	Transport & Testing- Shunt Reactor	2	EA		352,900.00	231,600.00	\$ -	\$ 705,800	\$ 463,200	\$ 1,169,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	641,250.00	384,750.00	256,500.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker	8	EA	350,000.00	57,239.00	24,531.00	\$ 2,800,000	\$ 457,912	\$ 196,248	\$ 3,454,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,194,419.50	716,651.70	477,767.80	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,402,779	\$ 1,823,144	\$ 1,072,736	\$ 13,298,659
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	43,800	LF	5.30	1.43	0.29	\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,100	LF	11.15	10.80	5.40	\$ 90,315	\$ 87,480	\$ 43,740	\$ 221,535
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,018	LF	266.50	53.04	13.26	\$ 537,664	\$ 107,008	\$ 26,752	\$ 671,424
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00				\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00				\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28				\$ -
6.11	345kV UG- Conduit	466	LF	266.73	202.15	100.00				\$ -
6.12	345kV UG- Cable	1,398	LF	167.00	100.20	66.80				\$ -
6.13	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				\$ -
6.14	Fiber Optic Cable	466	LF	7.40	3.33	2.22				\$ -
6.15	Ground Continuity Conductor	466	LF	13.04	7.53	5.02				\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 627,979	\$ 194,488	\$ 70,492	\$ 892,959
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,277	LF	2.09	3.42	1.46	\$ 36,126	\$ 59,006	\$ 25,288	\$ 120,421
7.2	Caweld, DSA, 4/0 , T, CROSS	462	EA	165.00	75.00		\$ 76,230	\$ 34,650	\$ -	\$ 110,880
7.3	Ground Rod, 3/4" x 15'	410	EA	135.00	67.50	7.50	\$ 55,350	\$ 27,675	\$ 3,075	\$ 86,100
TOTAL - GROUND GRID							\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	542,947.99	380,063.60	162,884.40	\$ 542,948	\$ 380,064	\$ 162,884	\$ 1,085,896
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
11.Sprain Brook 345kV Substation Expansion							\$ 45,653,436	\$ 130,816,120	\$ 145,549,713	\$ 322,019,268
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,672,804.15	4,145,487.49	\$ -	\$ 9,672,804	\$ 4,145,487	\$ 13,818,292
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		12,880,770.74		\$ -	\$ 12,880,771	\$ -	\$ 12,880,771
9.4	Utility PM and Project Oversight	1	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.5	Site Accommodation, Facilities, Storage	1	LS	3,220,192.68			\$ 3,220,193	\$ -	\$ -	\$ 3,220,193
	Engineering									
9.6	Design Engineering	1.00	LS		25,761,541.47		\$ -	\$ 25,761,541	\$ -	\$ 25,761,541
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,254,134.88		\$ -	\$ 2,254,135	\$ -	\$ 2,254,135
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		12,075,722.57		\$ -	\$ 12,075,723	\$ -	\$ 12,075,723
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		966,057.81		\$ -	\$ 966,058	\$ -	\$ 966,058
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,124,464.00	\$ -	\$ -	\$ 2,124,464	\$ 2,124,464
9.17	Legal Fees (Real estate)	1.00	LS		-	63,733.92	\$ -	\$ -	\$ 63,734	\$ 63,734
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 11,920,000	\$ -	\$ -	\$ 11,920,000	\$ 11,920,000
9.20	Sales Tax on Materials	8.80%	LS	45,653,435.63			\$ 4,017,502	\$ -	\$ -	\$ 4,017,502
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		322,019.27		\$ -	\$ 322,019	\$ -	\$ 322,019
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,237,695	\$ 73,613,826	\$ 18,262,785	\$ 99,114,306

NEXtera Energy- TO37 Core 2

12. Farragut 345kV Substation Expansion

	Total:	\$	121,533,973
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NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
12. Farragut 345kV Substation Expansion				
1. MARINE CONSTRUCITON CIVIL	\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS	\$ 645,162	\$ 683,178	\$ 429,480	\$ 1,757,821
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPTMENT	\$ 7,759,517	\$ 3,374,420	\$ 2,244,480	\$ 13,378,417
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID	\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE	\$ 2,516,145	\$ 1,907,422	\$ 727,723	\$ 5,151,291
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,919,583	\$ 12,927,931	\$ 3,049,455	\$ 18,896,969
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 24,408,083	\$ 33,263,982	\$ 18,940,401	\$ 76,612,467
SUBTOTAL (Costs):	\$ 29,538,083	\$ 36,341,982	\$ 20,992,401	\$ 86,872,467
CONTRACTOR MARK-UP (OH&P)	\$ 4,701,255	\$ 6,172,197	\$ 3,532,392	\$ 14,405,844
SUBTOTAL:	\$ 34,239,338	\$ 42,514,179	\$ 24,524,793	\$ 101,278,311
CONTINGENCY ON ENTIRE PROJECT	\$ 6,847,868	\$ 8,502,836	\$ 4,904,959	\$ 20,255,662
TOTAL:	\$ 41,087,206	\$ 51,017,015	\$ 29,429,752	\$ 121,533,973

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12. Farragut 345kV Substation Expansion										
1. MARINE CONSTRUCTON CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	68,400.00	45,600.00	\$ -	\$ 68,400	\$ 45,600	\$ 114,000
1.3	Sheet Pile Wall	840	FT	3,778.81	6,046.09	5,290.33	\$ 3,174,199	\$ 5,078,718	\$ 4,443,878	\$ 12,696,795
1.4	Dewater	1	LS		225,000.00	150,000.00	\$ -	\$ 225,000	\$ 150,000	\$ 375,000
1.5	Excavate and Remove existing organic material	8,077	CY		300.00	200.00	\$ -	\$ 2,423,111	\$ 1,615,407	\$ 4,038,519
1.6	Backfill (import, compacted in place)	65,424	CY	77.50	46.50	31.00	\$ 5,070,360	\$ 3,042,216	\$ 2,028,144	\$ 10,140,720
1.7	18" concrete pile	1,392	EA	3,367.00	3,030.30	2,020.20	\$ 4,686,864	\$ 4,218,178	\$ 2,812,118	\$ 11,717,160
1.8	Concrete Slab (Pier)	4,846	CY	480.00	448.00	672.00	\$ 2,326,187	\$ 2,171,108	\$ 3,256,661	\$ 7,753,956
1.9	3.5' Sea wall	610	FT	175.50	163.80	245.70	\$ 107,055	\$ 99,918	\$ 149,877	\$ 356,850
1.10	Continuous concrete on bulkhead	0	FT	234.00	218.40	327.60	\$ -	\$ -	\$ -	\$ -
1.11	Outter fender system	0	LF	80.00	48.00	72.00	\$ -	\$ -	\$ -	\$ -
1.12										
1.13										
TOTAL - Marine Construction Civil							\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	221	CY	703.89	804.44	502.78	\$ 155,559	\$ 177,781	\$ 111,113	\$ 444,453
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	554	CY	703.89	804.44	502.78	\$ 389,854	\$ 445,547	\$ 278,467	\$ 1,113,868
2.32	Precast Firewall for transformer, PARs, reactors	3,990	SF	25.00	15.00	10.00	\$ 99,750	\$ 59,850	\$ 39,900	\$ 199,500
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 645,162	\$ 683,178	\$ 429,480	\$ 1,757,821
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch-3 Ph	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28		\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50		\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		292,900.00	191,600.00	\$ -	\$ 292,900	\$ 191,600	\$ 484,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker	0	EA		57,239.00	24,531.00		\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA					\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA					\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00		\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00		\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50		\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75		\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,759,517	\$ 3,374,420	\$ 2,244,480	\$ 13,378,417
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	575	LF	266.50	53.04	13.26	\$ 153,238	\$ 30,498	\$ 7,625	\$ 191,360
6.7										
6.8	138kV UG- Conduit	0	LF	41.00	30.00	16.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	9,360.00	11,700.00		\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	52.00	47.00	29.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,000	LF	2.09	3.42	1.46	\$ 10,455	\$ 17,077	\$ 7,319	\$ 34,850
7.2	Caweld, DSA, 4/0 , T, CROSS	143	EA	165.00	75.00		\$ 23,595	\$ 10,725	\$ -	\$ 34,320
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	1,577,942.61	1,104,559.83	473,382.78	\$ 1,577,943	\$ 1,104,560	\$ 473,383	\$ 3,155,885
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	41,575.50	33,260.40	8,315.10	\$ 124,727	\$ 99,781	\$ 24,945	\$ 249,453
8.4	Backup Line Relays (87L): GE L90	3	EA	41,575.50	33,260.40	8,315.10	\$ 124,727	\$ 99,781	\$ 24,945	\$ 249,453
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.18	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,516,145	\$ 1,907,422	\$ 727,723	\$ 5,151,291
12. Farragut 345kV Substation Expansion							\$ 26,618,500	\$ 23,414,051	\$ 17,942,946	\$ 67,975,498
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,447,494.90	620,354.96	\$ -	\$ 1,447,495	\$ 620,355	\$ 2,067,850
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		577,154.98		\$ -	\$ 577,155	\$ -	\$ 577,155
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,308,619.90		\$ -	\$ 2,308,620	\$ -	\$ 2,308,620
9.4	Utility PM and Project Oversite	1	LS		577,154.98		\$ -	\$ 577,155	\$ -	\$ 577,155
9.5	Site Accommodation, Facilities, Storage	1	LS	577,154.98			\$ 577,155	\$ -	\$ -	\$ 577,155
	Engineering									
9.6	Design Engineering	1.00	LS		4,617,239.80		\$ -	\$ 4,617,240	\$ -	\$ 4,617,240
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		404,008.48		\$ -	\$ 404,008	\$ -	\$ 404,008
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,164,331.16		\$ -	\$ 2,164,331	\$ -	\$ 2,164,331
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		577,154.98		\$ -	\$ 577,155	\$ -	\$ 577,155
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		173,146.49		\$ -	\$ 173,146	\$ -	\$ 173,146
9.15	Laydown Lease	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,420,000	\$ -	\$ -	\$ 2,420,000	\$ 2,420,000
9.20	Sales Tax on Materials	8.80%	LS	26,618,500.43			\$ 2,342,428	\$ -	\$ -	\$ 2,342,428
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		67,975.50		\$ -	\$ 67,975	\$ -	\$ 67,975
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,919,583	\$ 12,927,931	\$ 3,049,455	\$ 18,896,969

NEXTera Energy- TO37 Core 2

13. Existing Ruland Road 138 kV Substation Upgrade

Total: \$ 2,030,035

NEXTera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
13. Existing Ruland Road 138 kV Substation Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at exisitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13. Existing Ruland Road 138 kV Substation Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
=3*3	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
11	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings	0	LS	58,500.00	58,500.00	29,250.00	\$ -	\$ -	\$ -	\$ -
3.24	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	Fiber Optic Cable		LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.12	Ground Continuity Conductor		LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	0	EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.21	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
13. Existing Ruland Road 138 kV Substation Upgrade							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXTera Energy- TO37 Core 2

14. Existing East Garden City 138 kV Substation Upgrades

Total: \$ 28,298,464

NEXTera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
14. Existing East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14. Existing East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.24	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.31	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.32	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.22	AL. Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0.00	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Reactor	0	EA		424,900.00	279,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.14	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.25	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.28	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
14. Existing East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversight	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
	Engineering									
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

<p align="center"> <u>NEXTera Energy- TO37 Core 2</u> <u>Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit</u> <u>(EGC To Dunwoodie 345 kV)</u> </p>	
Total:	\$ 188,625,656

	Total:	\$ 188,625,656
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NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 7	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR /GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

NEXtera Energy- TO37 Core 2

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits

(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)

Total: \$ 346,473,248

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
=A18				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632
SUBTOTAL (Costs):	\$ 92,520,355	\$ 99,703,098	\$ 52,461,045	\$ 244,684,497
CONTRACTOR MARK-UP (OH&P)	\$ 16,653,664	\$ 17,946,558	\$ 9,442,988	\$ 44,043,210
SUBTOTAL:	\$ 109,174,018	\$ 117,649,655	\$ 61,904,033	\$ 288,727,707
CONTINGENCY ON ENTIRE PROJECT	\$ 21,834,804	\$ 23,529,931	\$ 12,380,807	\$ 57,745,541
TOTAL:	\$ 131,008,822	\$ 141,179,587	\$ 74,284,840	\$ 346,473,248

Description of Work: Dunwoodie - New Rochelle Landing (double circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	520	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 832,000	\$ 2,496,000	\$ 832,000	\$ 4,160,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	20,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,496,000	\$ 561,600	\$ 3,057,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-SP -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	8.47	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	357,773	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 715,546	\$ 536,659	\$ 178,886	\$ 1,431,091
2.3	Trench Excavation	33,790	CY		\$ 17.5	\$ 7.5	\$ -	\$ 591,319	\$ 253,422	\$ 844,741
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,520	CY	\$ 50	\$ 25	\$ 14	\$ 175,988	\$ 86,234	\$ 49,277	\$ 311,498
2.5	Supply & Install Thermal Backfill -conduit level	29,566	CY	\$ 350	\$ 245	\$ 105	\$ 10,348,081	\$ 7,243,657	\$ 3,104,424	\$ 20,696,163
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,774	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,754,851	\$ 1,721,782	\$ 688,713	\$ 5,165,345
2.8	Conduit 8" SCH 40PVC	357,773	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 10,232,302	\$ 2,028,572	\$ 869,388	\$ 13,130,262
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	178,886	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 629,680	\$ 563,492	\$ 241,497	\$ 1,434,669
2.11	Warning Tape	44,722	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,708	\$ 11,180	\$ 4,472	\$ 22,361
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	5,984	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,720	\$ 44,880	\$ 149,600
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000
2.15	Splice Vault Backfill	1,795	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,133	\$ 10,771	\$ 35,904
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	Air Test Ducts	536,659	LF			\$ 0.25	\$ -	\$ -	\$ 134,165	\$ 134,165
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	28,581	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 400,133	\$ 400,133	\$ 200,067	\$ 1,000,333
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,939	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 177,678	\$ 186,562	\$ 79,955	\$ 444,195
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	138	EA		\$ 400	\$ 1,200	\$ -	\$ 55,097	\$ 165,291	\$ 220,388
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	138	EA		\$ 10	\$ 15	\$ -	\$ 1,377	\$ 2,066	\$ 3,444
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	296	EA		\$ 400	\$ 1,200	\$ -	\$ 118,264	\$ 354,791	\$ 473,055
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 462,462	\$ 308,308	\$ -	\$ 462,462	\$ 308,308	\$ 770,770
2.24	Excess Materials Disposal to Certified Backfill	49,372	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,209,614	\$ 518,406	\$ 1,728,020
2.25	Rock Excavation and Removal	26,516	CY		\$ 243	\$ 162	\$ -	\$ 6,443,332	\$ 4,295,555	\$ 10,738,886
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,774	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,774	\$ 19,887	\$ 59,660
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	93,915	FT	\$ 7	\$ 3	\$ 2	\$ 694,692	\$ 312,794	\$ 208,530	\$ 1,216,016
3.12	Ground Continuity Conductor	93,915	FT	\$ 13	\$ 8	\$ 5	\$ 1,224,562	\$ 706,901	\$ 471,267	\$ 2,402,731
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Spra							\$ 83,180,792	\$ 70,079,524	\$ 42,050,550	\$ 195,310,866
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,363,902	\$ 2,242,601	\$ -	\$ 3,363,902	\$ 2,242,601	\$ 5,606,504
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		7,812,434.62		\$ -	\$ 7,812,435	\$ -	\$ 7,812,435
4.4	Utility PM and Project Oversight	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.5	Site Accommodation, Facilities, Storage	1	LS	1,953,108.66			\$ 1,953,109	\$ -	\$ -	\$ 1,953,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,765,543	\$ -	\$ -	\$ 9,765,543	\$ -	\$ 9,765,543
4.7	LiDAR /GPR	1.0	LS		\$ 351,560	\$ 234,373	\$ -	\$ 351,560	\$ 234,373	\$ 585,933
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 820,306	\$ 546,870	\$ -	\$ 820,306	\$ 546,870	\$ 1,367,176
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,953,109		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 585,933		\$ -	\$ 585,933	\$ -	\$ 585,933
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 247,533	\$ -	\$ -	\$ 247,533	\$ 247,533
4.16	Legal Fees (Real estate)	1.00	LS		-	7,425.99	\$ -	\$ -	\$ 7,426	\$ 7,426
4.17	Insurance	-	LS		-		\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,920,000	\$ -	\$ -	\$ 6,920,000	\$ 6,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 83,180,791.58			\$ 7,386,454	\$ -	\$ -	\$ 7,386,454
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 195,311	\$ -	\$ -	\$ 195,311	\$ 195,311
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632

Total: \$ 385,634,343

Description of Work: East Garden City - Hempstead Harbor Landing (Shore Road, double circuits). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,147,000	\$ 3,063,000	\$ 10,210,000
1.3	Flaggers	330	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 528,000	\$ 1,584,000	\$ 528,000	\$ 2,640,000
1.4	K Rail / Lane Control / Metal Plates	53,909	LF	\$ 30	\$ 18	\$ 12	\$ 1,617,264	\$ 970,358	\$ 646,906	\$ 3,234,528
1.5	Police Support	13,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,584,000	\$ 356,400	\$ 1,940,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 408,400	\$ 1,225,200	\$ 408,400	\$ 2,042,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,553,664	\$ 12,590,558	\$ 5,026,706	\$ 20,170,928
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-DW -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	10.21	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,427,358	\$ 951,572	\$ 2,378,930
2.2	Formwork in Trench	431,270	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 862,541	\$ 646,906	\$ 215,635	\$ 1,725,082
2.3	Trench Excavation	67,885	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,187,990	\$ 509,139	\$ 1,697,129
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,243	CY	\$ 50	\$ 25	\$ 14	\$ 212,141	\$ 103,949	\$ 59,400	\$ 375,490
2.5	Supply & Install Thermal Backfill -conduit level	35,640	CY	\$ 350	\$ 245	\$ 105	\$ 12,473,897	\$ 8,731,728	\$ 3,742,169	\$ 24,947,795
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,604	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,320,782	\$ 2,075,489	\$ 830,196	\$ 6,226,466
2.8	Conduit 8" SCH 40PVC	431,270	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,334,333	\$ 2,445,303	\$ 1,047,987	\$ 15,827,624
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	215,635	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 759,036	\$ 679,251	\$ 291,108	\$ 1,729,394
2.11	Warning Tape	53,909	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,086	\$ 13,477	\$ 5,391	\$ 26,954
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	9,973	CY		\$ 17.5	\$ 7.5	\$ -	\$ 174,533	\$ 74,800	\$ 249,333
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Backfill	2,992	CY		\$ 14.0	\$ 6.0	\$ -	\$ 41,888	\$ 17,952	\$ 59,840
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	646,906	LF			\$ 0.25	\$ -	\$ -	\$ 161,726	\$ 161,726
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	33,940	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 475,162	\$ 475,162	\$ 237,581	\$ 1,187,905
2.21	PVMT, AGGREGATE, 10", BASE COURSE	9,428	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 210,994	\$ 221,544	\$ 94,948	\$ 527,486
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	166	EA		\$ 400	\$ 1,200	\$ -	\$ 66,416	\$ 199,247	\$ 265,663
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	166	EA		\$ 10	\$ 15	\$ -	\$ 1,660	\$ 2,491	\$ 4,151
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	356	EA		\$ 400	\$ 1,200	\$ -	\$ 142,559	\$ 427,676	\$ 570,235
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 557,466	\$ 371,644	\$ -	\$ 557,466	\$ 371,644	\$ 929,110
2.24	Excess Materials Disposal to Certified Backfill	97,326	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,384,498	\$ 1,021,928	\$ 3,406,425
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	77,858	CF		\$ 1.0	\$ 0.5	\$ -	\$ 77,858	\$ 38,929	\$ 116,788
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 32,756,973	\$ 23,529,781	\$ 14,478,636	\$ 70,765,391
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	113,208	FT	\$ 7	\$ 3	\$ 2	\$ 837,403	\$ 377,052	\$ 251,368	\$ 1,465,823
3.12	Ground Continuity Conductor	113,208	FT	\$ 13	\$ 8	\$ 5	\$ 1,476,125	\$ 852,120	\$ 568,080	\$ 2,896,326
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 63,187,504	\$ 38,177,910	\$ 24,731,740	\$ 126,097,154
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie							\$ 98,498,141	\$ 74,298,250	\$ 44,237,082	\$ 217,033,473
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,556,060	\$ 2,370,707	\$ -	\$ 3,556,060	\$ 2,370,707	\$ 5,926,767
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,170,334.73		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		8,681,338.90		\$ -	\$ 8,681,339	\$ -	\$ 8,681,339
4.4	Utility PM and Project Oversight	1	LS		2,170,334.73		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.5	Site Accommodation, Facilities, Storage	1	LS	2,170,334.73			\$ 2,170,335	\$ -	\$ -	\$ 2,170,335
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,851,674	\$ -	\$ -	\$ 10,851,674	\$ -	\$ 10,851,674
4.7	LiDAR /GPR	1.0	LS		\$ 390,660	\$ 260,440	\$ -	\$ 390,660	\$ 260,440	\$ 651,100
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 911,541	\$ 607,694	\$ -	\$ 911,541	\$ 607,694	\$ 1,519,234
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,170,335		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 651,100		\$ -	\$ 651,100	\$ -	\$ 651,100
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 88,246	\$ -	\$ -	\$ 88,246	\$ 88,246
4.16	Legal Fees (Real estate)	1.00	LS		-	2,647.38	\$ -	\$ -	\$ 2,647	\$ 2,647
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,700,000	\$ -	\$ -	\$ 7,700,000	\$ 7,700,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 98,498,141.33			\$ 8,746,635	\$ -	\$ -	\$ 8,746,635
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 217,033	\$ -	\$ -	\$ 217,033	\$ 217,033
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,916,970	\$ 33,123,408	\$ 11,266,787	\$ 55,307,165

NEXtera Energy- TO37 Core 2

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)

EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV

Total: \$ 745,825,447

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345K				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 170,749,328	\$ 149,849,551	\$ 99,574,291	\$ 420,173,170
2. TRANSITION STATION	\$ 1,367,680	\$ 1,706,372	\$ 1,640,135	\$ 4,714,187
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 19,395,170	\$ 62,617,544	\$ 19,812,816	\$ 101,825,530
SUBTOTAL (Costs):	\$ 191,512,178	\$ 214,173,467	\$ 121,027,241	\$ 526,712,886
CONTRACTOR MARK-UP (OH&P)	\$ 34,472,192	\$ 38,551,224	\$ 21,784,903	\$ 94,808,320
SUBTOTAL:	\$ 225,984,370	\$ 252,724,691	\$ 142,812,144	\$ 621,521,206
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ 124,304,241
TOTAL:	\$ 225,984,370	\$ 252,724,691	\$ 142,812,144	\$ 745,825,447

Description of Work: New Rochelle landing - Hempstead Harbor Landing. Part of any Dunwoodie to Shore/Ruland/EGC 345 kV project segment (Include HDD's to get onshore at both ends of route) 1600 mm2 Tri-Core										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	300,390	FT	\$ 537	\$ 400	\$ 250	\$ 161,309,301	\$ 120,155,904	\$ 75,097,440	\$ 356,562,645
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 15,203,818	\$ 10,135,879	\$ -	\$ 15,203,818	\$ 10,135,879	\$ 25,339,697
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.5	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.7	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.8	Fiber Optic Cable	100,130	FT	\$ 7			\$ 740,661	\$ -	\$ -	\$ 740,661
1.9	Ground Continuity Conductor	100,130	FT	\$ 13			\$ 1,305,594	\$ -	\$ -	\$ 1,305,594
1.10							\$ -	\$ -	\$ -	\$ -
1.11	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.12	HDD along Route	4,342	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,947,200	\$ 13,894,400	\$ 13,894,400	\$ 34,736,000
TOTAL - Submarine cable:							\$ 170,749,328	\$ 149,849,551	\$ 99,574,291	\$ 420,173,170
2. TRANSITION STATION										
2.1	Site Clearing	1.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 16,200	\$ 10,800	\$ 27,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	2,420	CY		24.50	10.50	\$ -	\$ 59,290	\$ 25,410	\$ 84,700
2.4	Site Grading- Excavation for Substation Pad	7,260	CY		9.00	6.00	\$ -	\$ 65,340	\$ 43,560	\$ 108,900
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	3,920	CY		21.00	9.00	\$ -	\$ 82,328.40	\$ 35,283.60	\$ 117,612.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	5,881	CY		2.40	1.60	\$ -	\$ 14,113	\$ 9,409	\$ 23,522
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	3,920	CY	25.00	2.40	1.60	\$ 98,010	\$ 9,409	\$ 6,273	\$ 113,692
2.8	Install substation 8" pad base	7,260	SY	11.00	6.00	4.00	\$ 79,860	\$ 43,560	\$ 29,040	\$ 152,460
2.9	Site Surfacing - Aggregate 6" Thick	7,260	SY	16.50	4.50	3.00	\$ 119,790	\$ 32,670	\$ 21,780	\$ 174,240
2.10	7' Station Fence w/ Barbed Wire & Grounding	1,350	LF	13.85	13.85	6.92	\$ 18,695	\$ 18,695	\$ 9,347	\$ 46,737
2.11	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
2.12	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
2.13	Erosion Control-Silt fence install & remove	2,250	LF	2.41	3.16	0.72	\$ 5,423	\$ 7,110	\$ 1,620	\$ 14,153
2.14	Temporary fencing	1,500	LF	7.50	5.25	2.25	\$ 11,250	\$ 7,875	\$ 3,375	\$ 22,500
2.15	345kV, Cable sealing end - 3 Ph	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.16	345kV, lighting arrester	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.17	345kV, Cable sealing end - 3 Ph	18	EA	8,346.00	5,758.74	3,839.16	\$ 150,228	\$ 103,657	\$ 69,105	\$ 322,990
2.18	345kV, lighting arrester	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
2.19	AL. Bus Tubing, 5" SCH 80	630	LF	25.00	184.94	123.29	\$ 15,750	\$ 116,511	\$ 77,674	\$ 209,935
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	-	-	\$ 836	\$ -	\$ -	\$ 836
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Ground Rod, 3/4" x 15'	54	EA	135.00	67.50	7.50	\$ 7,290	\$ 3,645	\$ 405	\$ 11,340
2.24	Trench Box Shoring (Vault)	12	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 216,949	\$ 325,424	\$ 542,373
2.25	Splice Vault Excavation	7,765	CY		\$ 17.5	\$ 7.5	\$ -	\$ 135,893	\$ 58,240	\$ 194,133
2.26	Splice Vault Supply & Installation	12	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 546,000	\$ 257,400	\$ 600,600	\$ 1,404,000
2.27	Splice Vault Backfill	2,330	CY		\$ 14.0	\$ 6.0	\$ -	\$ 32,614	\$ 13,978	\$ 46,592
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	7,066	CY		\$ 24.5	\$ 10.5	\$ -	\$ 173,128	\$ 74,198	\$ 247,326
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	12	EA			\$ 4,000	\$ -	\$ -	\$ 48,000	\$ 48,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	7,765	CF		\$ 1.0	\$ 0.5	\$ -	\$ 7,765	\$ 3,883	\$ 11,648
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 1,367,680	\$ 1,706,372	\$ 1,640,135	\$ 4,714,187
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 172,117,008	\$ 151,555,924	\$ 101,214,425	\$ 424,887,357
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		4,248,873.57		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		16,995,494.27		\$ -	\$ 16,995,494	\$ -	\$ 16,995,494
3.4	Utility PM and Project Oversight	1	LS		4,248,873.57		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.5	Site Accommodation, Facilities, Storage	1	LS	4,248,873.57			\$ 4,248,874	\$ -	\$ -	\$ 4,248,874
	Engineering									
3.6	Design Engineering	1	LS		\$ 21,244,368		\$ -	\$ 21,244,368	\$ -	\$ 21,244,368
3.7	Surveying/Staking	1	LS		\$ 2,974,211		\$ -	\$ 2,974,211	\$ -	\$ 2,974,211
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 4,248,874		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 1,274,662		\$ -	\$ 1,274,662	\$ -	\$ 1,274,662
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 868,559	\$ -	\$ -	\$ 868,559	\$ 868,559
3.15	Legal Fees (Real estate)	1.00	LS		-	26,056.77	\$ -	\$ -	\$ 26,057	\$ 26,057
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 172,117,008			\$ 15,146,297	\$ -	\$ -	\$ 15,146,297
3.21	Contractor Permits	1	LS		\$ 424,887		\$ -	\$ 424,887	\$ -	\$ 424,887
3.22	Payment & Performance Bond	1	LS			\$ 14,900,000	\$ -	\$ -	\$ 14,900,000	\$ 14,900,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 19,395,170	\$ 62,617,544	\$ 19,812,816	\$ 101,825,530

NEXtera Energy- TO37 Core 2

Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit

(Ruland To Sprain Brook 345 kV)

Total: \$ 349,868,481

NEXtera Energy- TO37 Core 2										
		Material Supply	Labor Supply	Equip Supply	Total					
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT		\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885					
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729					
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION		\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373					
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274					
SUBTOTAL (Costs):		\$ 90,427,881	\$ 103,561,178	\$ 53,093,201	\$ 247,082,261					
CONTRACTOR MARK-UP (OH&P)		\$ 16,277,019	\$ 18,641,012	\$ 9,556,776	\$ 44,474,807					
SUBTOTAL:		\$ 106,704,900	\$ 122,202,190	\$ 62,649,977	\$ 291,557,067					
CONTINGENCY ON ENTIRE PROJECT		\$ 21,340,980	\$ 24,440,438	\$ 12,529,995	\$ 58,311,413					
TOTAL:		\$ 128,045,880	\$ 146,642,628	\$ 75,179,973	\$ 349,868,481					

Description of Work: Ruland - Hempstead Harbor Landing (Shore Road, single circuit). 5000 kmil copper XLPE, single cable per phase..										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	15.89	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 11,120,200	\$ 4,765,800	\$ 15,886,000
1.3	Flaggers	500	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 800,000	\$ 2,400,000	\$ 800,000	\$ 4,000,000
1.4	K Rail / Lane Control / Metal Plates	83,878	LF	\$ 30	\$ 18	\$ 12	\$ 2,516,342	\$ 1,509,805	\$ 1,006,537	\$ 5,032,685
1.5	Police Support	20,000.0	HR		\$ 120	\$ 27	\$ -	\$ 2,400,000	\$ 540,000	\$ 2,940,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	15.89	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 635,440	\$ 1,906,320	\$ 635,440	\$ 3,177,200
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	15.89	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,220,863	\$ 1,480,575	\$ 3,701,438
2.2	Formwork in Trench	643,225	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,286,449	\$ 964,837	\$ 321,612	\$ 2,572,899
2.3	Trench Excavation	53,602	CY		\$ 17.5	\$ 7.5	\$ -	\$ 938,036	\$ 402,015	\$ 1,340,051
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,350	SF	\$ 50	\$ 25	\$ 14	\$ 167,506	\$ 82,078	\$ 46,902	\$ 296,486
2.5	Supply & Install Thermal Backfill	28,141	CY	\$ 350	\$ 245	\$ 105	\$ 9,849,377	\$ 6,894,564	\$ 2,954,813	\$ 19,698,755
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,101	CY	\$ 200	\$ 125	\$ 50	\$ 2,620,247	\$ 1,637,654	\$ 655,062	\$ 4,912,963
2.9	Conduit 8" SCH 40PVC	335,512	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 9,595,652	\$ 1,902,355	\$ 815,295	\$ 12,313,302
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	167,756	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 590,502	\$ 528,432	\$ 226,471	\$ 1,345,404
2.12	Warning Tape	167,756	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 25,163	\$ 41,939	\$ 16,776	\$ 83,878
2.13	Trench Box Shoring (Vault)	49	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 885,876	\$ 1,328,814	\$ 2,214,689
2.14	Splice Vault Excavation	8,145	CY		\$ 17.5	\$ 7.5	\$ -	\$ 142,536	\$ 61,087	\$ 203,622
2.15	Splice Vault Supply & Installation	49	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,715,000	\$ 808,500	\$ 1,886,500	\$ 4,410,000
2.16	Splice Vault Backfill	2,443	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,209	\$ 14,661	\$ 48,869

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	805	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 644,000	\$ 1,288,000	\$ 1,288,000	\$ 3,220,000
2.18	HDD along Route	1,200	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 960,000	\$ 1,920,000	\$ 1,920,000	\$ 4,800,000
2.19	Air Test Ducts	503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LiDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 43,680	\$ 29,120	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXtera Energy- TO37 Core 2

Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits

Total: \$ 133,317,472

NEXtera Energy- TO37 Core 2										
		Material Supply	Labor Supply	Equip Supply	Total					
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT		\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800					
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		\$ -	\$ -	\$ -	\$ -					
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION		\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381					
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576					
SUBTOTAL (Costs):		\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757					
CONTRACTOR MARK-UP (OH&P)		\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136					
SUBTOTAL:		\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893					
CONTINGENCY ON ENTIRE PROJECT		\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579					
TOTAL:		\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472					
Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversight	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LiDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXtera Energy- TO37 Core 2

Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,216
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	\$ -	\$ 1,492	\$ 2,239	\$ 3,731
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LiDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

NEXtera Energy- TO37 Core 2

Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO37 Core 2

Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO37 Core 2

Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit

(EGC-Farragut 345kv)

Total: \$ 235,279,477

NEXtera Energy- TO37 Core 2										
		Material Supply	Labor Supply	Equip Supply	Total					
Comp 249 - Jamaica To Farragut 345kv Onshore UG Cables -Single circuit(EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT		\$ 2,686,464	\$ 13,140,838	\$ 5,290,426	\$ 21,117,728					
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		\$ 18,736,904	\$ 14,861,575	\$ 9,340,154	\$ 42,938,633					
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION		\$ 34,016,741	\$ 20,570,670	\$ 13,308,667	\$ 67,896,078					
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION		\$ 6,242,606	\$ 20,847,264	\$ 7,115,514	\$ 34,205,384					
SUBTOTAL (Costs):		\$ 61,682,715	\$ 69,420,347	\$ 35,054,761	\$ 166,157,823					
CONTRACTOR MARK-UP (OH&P)		\$ 11,102,889	\$ 12,495,662	\$ 6,309,857	\$ 29,908,408					
SUBTOTAL:		\$ 72,785,604	\$ 81,916,010	\$ 41,364,618	\$ 196,066,231					
CONTINGENCY ON ENTIRE PROJECT		\$ 14,557,121	\$ 16,383,202	\$ 8,272,924	\$ 39,213,246					
TOTAL:		\$ 87,342,724	\$ 98,299,212	\$ 49,637,541	\$ 235,279,477					
Description of Work: Construct a new Farragut 345kv GIS substation and connect back to the existing Farragut 345kV, further interconnecting the Farragut East and West ring buses.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 249 - Jamaica To Farragut 345kv Onshore UG Cables -Single circuit(EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.96	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,672,000	\$ 3,288,000	\$ 10,960,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	57,869	LF	\$ 30	\$ 18	\$ 12	\$ 1,736,064	\$ 1,041,638	\$ 694,426	\$ 3,472,128
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	10.96	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 438,400	\$ 1,315,200	\$ 438,400	\$ 2,192,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,686,464	\$ 13,140,838	\$ 5,290,426	\$ 21,117,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.96	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,532,208	\$ 1,021,472	\$ 2,553,680
2.2	Formwork in Trench	452,030	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 904,061	\$ 678,046	\$ 226,015	\$ 1,808,122
2.3	Trench Excavation	37,669	CY		\$ 17.5	\$ 7.5	\$ -	\$ 659,211	\$ 282,519	\$ 941,730
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,354	SF	\$ 50	\$ 25	\$ 14	\$ 117,716	\$ 57,681	\$ 32,961	\$ 208,358
2.5	Supply & Install Thermal Backfill	19,776	CY	\$ 350	\$ 245	\$ 105	\$ 6,921,716	\$ 4,845,201	\$ 2,076,515	\$ 13,843,431
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,207	CY	\$ 200	\$ 125	\$ 50	\$ 1,841,396	\$ 1,150,873	\$ 460,349	\$ 3,452,618
2.9	Conduit 8" SCH 40PVC	231,475	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 6,620,191	\$ 1,312,464	\$ 562,485	\$ 8,495,140
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	115,738	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 407,396	\$ 364,573	\$ 156,246	\$ 928,216
2.12	Warning Tape	115,738	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 17,361	\$ 28,934	\$ 11,574	\$ 57,869
2.13	Trench Box Shoring (Vault)	34	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 614,689	\$ 922,034	\$ 1,536,723
2.14	Splice Vault Excavation	5,652	CY		\$ 17.5	\$ 7.5	\$ -	\$ 98,902	\$ 42,387	\$ 141,289
2.15	Splice Vault Supply & Installation	34	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,190,000	\$ 561,000	\$ 1,309,000	\$ 3,060,000
2.16	Splice Vault Backfill	1,695	CY		\$ 14.0	\$ 6.0	\$ -	\$ 23,737	\$ 10,173	\$ 33,909
2.17	Jack and Bore along Route	345	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 276,000	\$ 552,000	\$ 552,000	\$ 1,380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	347,213	LF			\$ 0.25	\$ -	\$ -	\$ 86,803	\$ 86,803
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,817	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 305,439	\$ 305,439	\$ 152,719	\$ 763,596
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,060	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 135,629	\$ 142,411	\$ 61,033	\$ 339,073

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	92	EA		\$ 400	\$ 1,200	\$ -	\$ 36,828	\$ 110,484	\$ 147,312
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	92	EA		\$ 10	\$ 15	\$ -	\$ 921	\$ 1,381	\$ 2,302
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	198	EA		\$ 400	\$ 1,200	\$ -	\$ 79,105	\$ 237,316	\$ 316,421
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	54,113	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,325,765	\$ 568,185	\$ 1,893,951
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	34	EA			\$ 4,000	\$ -	\$ -	\$ 136,000	\$ 136,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	43,321	CF		\$ 1.0	\$ 0.5	\$ -	\$ 43,321	\$ 21,660	\$ 64,981
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 18,736,904	\$ 14,861,575	\$ 9,340,154	\$ 42,938,633
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	182,287	FT	\$ 167	\$ 100	\$ 67	\$ 30,441,882	\$ 18,265,129	\$ 12,176,753	\$ 60,883,764
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	102	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,195,644	\$ 1,004,341	\$ 286,955	\$ 2,486,940
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	34	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 970,647	\$ 582,388	\$ 388,259	\$ 1,941,295
3.11	Fiber Optic Cable	60,762	FT	\$ 7	\$ 3	\$ 2	\$ 449,458	\$ 202,375	\$ 134,916	\$ 786,749
3.12	Ground Continuity Conductor	60,762	FT	\$ 13	\$ 8	\$ 5	\$ 792,279	\$ 457,357	\$ 304,905	\$ 1,554,541
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 34,016,741	\$ 20,570,670	\$ 13,308,667	\$ 67,896,078
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 55,440,109	\$ 48,573,083	\$ 27,939,247	\$ 131,952,439
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,295,370	\$ 1,530,247	\$ -	\$ 2,295,370	\$ 1,530,247	\$ 3,825,616
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,319,524.39		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.3	Construction Project Management / Supervision	1	LS		5,278,097.54		\$ -	\$ 5,278,098	\$ -	\$ 5,278,098
4.4	Utility PM and Project Oversight	1	LS		1,319,524.39		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.5	Site Accommodation, Facilities, Storage	1	LS	1,319,524.39			\$ 1,319,524	\$ -	\$ -	\$ 1,319,524
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,597,622	\$ -	\$ -	\$ 6,597,622	\$ -	\$ 6,597,622
4.7	LiDAR /GPR	1.0	LS		\$ 237,514	\$ 158,343	\$ -	\$ 237,514	\$ 158,343	\$ 395,857
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 554,200	\$ 369,467	\$ -	\$ 554,200	\$ 369,467	\$ 923,667
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,319,524		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 395,857		\$ -	\$ 395,857	\$ -	\$ 395,857
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 199,500	\$ -	\$ -	\$ 199,500	\$ 199,500
4.16	Legal Fees (Real estate)	1.00	LS		-	5,985.00	\$ -	\$ -	\$ 5,985	\$ 5,985
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,700,000	\$ -	\$ -	\$ 4,700,000	\$ 4,700,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 55,440,108.80			\$ 4,923,082	\$ -	\$ -	\$ 4,923,082
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 131,952	\$ -	\$ -	\$ 131,952	\$ 131,952
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,242,606	\$ 20,847,264	\$ 7,115,514	\$ 34,205,384

NEXtera Energy- TO37 Core 2

Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit

(EGC-Jamaica 138kv & EGC-Farragut 345kv)

Total: \$ 417,671,578

NEXtera Energy- TO37 Core 2										
		Material Supply	Labor Supply	Equip Supply	Total					
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT		\$ 2,843,456	\$ 13,949,314	\$ 5,610,142	\$ 22,402,912					
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		\$ 37,471,503	\$ 27,164,952	\$ 17,236,589	\$ 81,873,044					
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION		\$ 65,241,174	\$ 39,963,042	\$ 25,809,297	\$ 131,013,513					
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 11,726,279	\$ 35,817,102	\$ 12,132,954	\$ 59,676,335					
SUBTOTAL (Costs):		\$ 117,282,412	\$ 116,894,409	\$ 60,788,982	\$ 294,965,804					
CONTRACTOR MARK-UP (OH&P)		\$ 21,110,834	\$ 21,040,994	\$ 10,942,017	\$ 53,093,845					
SUBTOTAL:		\$ 138,393,246	\$ 137,935,403	\$ 71,730,999	\$ 348,059,648					
CONTINGENCY ON ENTIRE PROJECT		\$ 27,678,649	\$ 27,587,081	\$ 14,346,200	\$ 69,611,930					
TOTAL:		\$ 166,071,896	\$ 165,522,484	\$ 86,077,199	\$ 417,671,578					

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	340	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 544,000	\$ 1,632,000	\$ 544,000	\$ 2,720,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	13,600.0	HR		\$ 120	\$ 27	\$ -	\$ 1,632,000	\$ 367,200	\$ 1,999,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,843,456	\$ 13,949,314	\$ 5,610,142	\$ 22,402,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	12	Mile		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	466,058	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 932,115	\$ 699,086	\$ 233,029	\$ 1,864,230
Double Circuit Conduit Trench (EGC-JA 138KV & EGC-New Farragut 345kV)										
2.3	Trench Excavation	73,361	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,283,816	\$ 550,207	\$ 1,834,023
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,585	SF	\$ 50	\$ 25	\$ 14	\$ 229,253	\$ 112,334	\$ 64,191	\$ 405,778
2.5	Supply & Install Thermal Backfill	38,514	CY	\$ 350	\$ 245	\$ 105	\$ 13,480,069	\$ 9,436,048	\$ 4,044,021	\$ 26,960,138
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	17,943	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,588,644	\$ 2,242,902	\$ 897,161	\$ 6,728,707
2.9	Conduit 8" SCH 40PVC	489,562	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 14,001,462	\$ 2,775,814	\$ 1,189,635	\$ 17,966,911
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	244,781	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 861,628	\$ 771,060	\$ 330,454	\$ 1,963,142
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 30,598	\$ 12,239	\$ 61,195
Single Circuit Conduit Trench										
2.13	Trench Excavation	1,792	CY		\$ 17.5	\$ 7.5	\$ -	\$ 31,360	\$ 13,440	\$ 44,800
2.14	Supply & Install 6" Sand Bedding for direct bury conduits	112	SF	\$ 50	\$ 25	\$ 14	\$ 5,600	\$ 2,744	\$ 1,568	\$ 9,912
2.15	Supply & Install Thermal Backfill	896	CY	\$ 350	\$ 245	\$ 105	\$ 313,600	\$ 219,520	\$ 94,080	\$ 627,200
2.16	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Native Backfill -direct bury conduits sys Trench	1,114	CY		\$ 14.0	\$ 6.0	\$ -	\$ 15,596	\$ 6,684	\$ 22,281
2.18	Supply & Install Ductbank Concrete	438	CY	\$ 200	\$ 125	\$ 50	\$ 87,599	\$ 54,749	\$ 21,900	\$ 164,248
2.19	Conduit 8" SCH 40PVC	10,752	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 307,507	\$ 60,964	\$ 26,127	\$ 394,598
2.20	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.21	Conduit 2" SCH 40PVC	5,376	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 18,924	\$ 16,934	\$ 7,258	\$ 43,116
2.22	Warning Tape	2,688	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 403	\$ 672	\$ 269	\$ 1,344
138 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	36	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 650,847	\$ 976,271	\$ 1,627,119
2.13	Splice Vault Excavation	4,928	CY		\$ 17.5	\$ 7.5	\$ -	\$ 86,240	\$ 36,960	\$ 123,200
2.14	Splice Vault Supply & Installation	36	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,260,000	\$ 594,000	\$ 1,386,000	\$ 3,240,000
2.15	Splice Vault Backfill	1,478	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,698	\$ 8,870	\$ 29,568
345 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.13	Splice Vault Excavation	5,818	CY		\$ 17.5	\$ 7.5	\$ -	\$ 101,811	\$ 43,633	\$ 145,444
2.14	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.15	Splice Vault Backfill	1,745	CY		\$ 14.0	\$ 6.0	\$ -	\$ 24,435	\$ 10,472	\$ 34,907
2.16	Jack and Bore along Route	250	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 400,000	\$ 800,000	\$ 800,000	\$ 2,000,000
2.17	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	750,470	LF			\$ 0.25	\$ -	\$ -	\$ 187,618	\$ 187,618
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	36,670	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 513,377	\$ 513,377	\$ 256,689	\$ 1,283,443
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,186	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 227,964	\$ 239,362	\$ 102,584	\$ 569,910
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	184	EA		\$ 400	\$ 1,200	\$ -	\$ 73,525	\$ 220,575	\$ 294,099
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	184	EA		\$ 10	\$ 15	\$ -	\$ 1,838	\$ 2,757	\$ 4,595
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	394	EA		\$ 400	\$ 1,200	\$ -	\$ 157,642	\$ 472,926	\$ 630,568
2.23	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 632,814	\$ 421,876	\$ -	\$ 632,814	\$ 421,876	\$ 1,054,690
2.24	Excess Materials Disposal to Certified Backfill	106,029	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,597,716	\$ 1,113,307	\$ 3,711,023
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	71	EA			\$ 4,000	\$ -	\$ -	\$ 284,000	\$ 284,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	85,899	CF		\$ 1.0	\$ 0.5	\$ -	\$ 85,899	\$ 42,949	\$ 128,848
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 37,471,503	\$ 27,164,952	\$ 17,236,589	\$ 81,873,044
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	108	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 636,984	\$ 1,063,420	\$ 303,834	\$ 2,004,238
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	184,297	FT	\$ 167	\$ 100	\$ 67	\$ 30,777,607	\$ 18,466,564	\$ 12,311,043	\$ 61,555,215
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	105	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,230,810	\$ 1,033,880	\$ 295,394	\$ 2,560,085
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	3	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 83,415	\$ 29,539	\$ 8,440	\$ 121,394
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking (138kv)	36	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 959,724	\$ 575,834	\$ 383,890	\$ 1,919,448
3.10	Link Box & MH racking (345kv)	35	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 999,196	\$ 599,517	\$ 399,678	\$ 1,998,392
3.10	Fiber Optic Cable	125,687	FT	\$ 7	\$ 3	\$ 2	\$ 929,709	\$ 418,614	\$ 279,076	\$ 1,627,399
3.11	Ground Continuity Conductor	125,687	FT	\$ 13	\$ 8	\$ 5	\$ 1,638,837	\$ 946,048	\$ 630,699	\$ 3,215,584
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 65,241,174	\$ 39,963,042	\$ 25,809,297	\$ 131,013,513
Comp 247 - Jamaica to East Garden City 138 and 345kv Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)							\$ 105,556,133	\$ 81,077,308	\$ 48,656,028	\$ 235,289,469
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,892,000	\$ 2,594,667	\$ -	\$ 3,892,000	\$ 2,594,667	\$ 6,486,667
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,352,894.69		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.3	Construction Project Management / Supervision	1	LS		9,411,578.75		\$ -	\$ 9,411,579	\$ -	\$ 9,411,579
4.4	Utility PM and Project Oversight	1	LS		2,352,894.69		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.5	Site Accommodation, Facilities, Storage	1	LS	2,352,894.69			\$ 2,352,895	\$ -	\$ -	\$ 2,352,895
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,764,473	\$ -	\$ -	\$ 11,764,473	\$ -	\$ 11,764,473

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.7	LiDAR /GPR	1.0	LS		\$ 423,521	\$ 282,347	\$ -	\$ 423,521	\$ 282,347	\$ 705,868
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 988,216	\$ 658,811	\$ -	\$ 988,216	\$ 658,811	\$ 1,647,026
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,352,895		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 705,868		\$ -	\$ 705,868	\$ -	\$ 705,868
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 8,340,000	\$ -	\$ -	\$ 8,340,000	\$ 8,340,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 105,556,132.87			\$ 9,373,385	\$ -	\$ -	\$ 9,373,385
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 235,289	\$ -	\$ -	\$ 235,289	\$ 235,289
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,726,279	\$ 35,817,102	\$ 12,132,954	\$ 59,676,335

NEXtera Energy- TO37 Core 2

Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit

Total: \$ 5,354,910

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351
SUBTOTAL (Costs):	\$ 1,083,440	\$ 2,001,924	\$ 696,353	\$ 3,781,716
CONTRACTOR MARK-UP (OH&P)	\$ 195,019	\$ 360,346	\$ 125,343	\$ 680,709
SUBTOTAL:	\$ 1,278,459	\$ 2,362,270	\$ 821,696	\$ 4,462,425
CONTINGENCY ON ENTIRE PROJECT	\$ 255,692	\$ 472,454	\$ 164,339	\$ 892,485
TOTAL:	\$ 1,534,151	\$ 2,834,724	\$ 986,035	\$ 5,354,910

Description of Work: Rebuild 0.2 mile of UG line (trench, conduits and cable), single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.20	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	1,056	LF	\$ 30	\$ 18	\$ 12	\$ 31,680	\$ 19,008	\$ 12,672	\$ 63,360
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	0.20	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 8,000	\$ 24,000	\$ 8,000	\$ 40,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.20	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 27,960	\$ 18,640	\$ 46,600
2.2	Formwork in Trench	8,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 16,512	\$ 12,384	\$ 4,128	\$ 33,024
2.3	Trench Excavation	688	CY		\$ 17.5	\$ 7.5	\$ -	\$ 12,040	\$ 5,160	\$ 17,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	43	SF	\$ 50	\$ 25	\$ 14	\$ 2,150	\$ 1,054	\$ 602	\$ 3,806
2.5	Supply & Install Thermal Backfill	361	CY	\$ 350	\$ 245	\$ 105	\$ 126,420	\$ 88,494	\$ 37,926	\$ 252,840
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	168	CY	\$ 200	\$ 125	\$ 50	\$ 33,632	\$ 21,020	\$ 8,408	\$ 63,060
2.9	Conduit 8" SCH 40PVC	4,224	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 120,806	\$ 23,950	\$ 10,264	\$ 155,021
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	2,112	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 7,434	\$ 6,653	\$ 2,851	\$ 16,938
2.12	Warning Tape	2,112	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 317	\$ 528	\$ 211	\$ 1,056
2.13	Trench Box Shoring (Vault)	1	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 18,079	\$ 27,119	\$ 45,198
2.14	Splice Vault Excavation	137	CY		\$ 17.5	\$ 7.5	\$ -	\$ 2,396	\$ 1,027	\$ 3,422
2.15	Splice Vault Supply & Installation	1	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 35,000	\$ 16,500	\$ 38,500	\$ 90,000
2.16	Splice Vault Backfill	41	CY		\$ 14.0	\$ 6.0	\$ -	\$ 575	\$ 246	\$ 821
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	6,336	LF			\$ 0.25	\$ -	\$ -	\$ 1,584	\$ 1,584

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 5,696	\$ 5,696	\$ 2,848	\$ 14,241
2.21	PVMT, AGGREGATE, 10", BASE COURSE	113	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 2,529	\$ 2,656	\$ 1,138	\$ 6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$ 400	\$ 1,200	\$ -	\$ 673	\$ 2,018	\$ 2,691
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$ 10	\$ 15	\$ -	\$ 17	\$ 25	\$ 42
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LIDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

Other Comp. 138kV Upgrades

Other Comp. 138kV Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Comp. 138kV Upgrades				
1. West Bus-Kings CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378
CONTRACTOR MARK-UP (OH&P)	\$ 829,380	\$ 872,432	\$ 442,722	\$ 2,144,534
SUBTOTAL:	\$ 5,437,050	\$ 5,719,276	\$ 2,902,287	\$ 14,058,612
CONTINGENCY ON ENTIRE PROJECT	\$ 1,087,410	\$ 1,143,855	\$ 580,457	\$ 2,811,722
TOTAL:	\$ 6,524,459	\$ 6,863,131	\$ 3,482,744	\$ 16,870,335

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1. West Bus-Kings CT Upgrade										
1.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
1.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
1.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
							\$ -	from	\$ -	\$ -
TOTAL - West Bus-Kings-Pligrim CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,155,935.10	\$ 2,096,798.80	\$ 2,015,966.10	\$ 8,268,700.00
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 123,383	\$ 82,255	\$ -	\$ 123,383	\$ 82,255	\$ 205,638
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.3	Construction Project Management / Supervision	1	LS		330,748.00		\$ -	\$ 330,748	\$ -	\$ 330,748
4.4	Utility PM and Project Oversight	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.5	Site Accommodation, Facilities, Storage	1	LS	82,687.00			\$ 82,687	\$ -	\$ -	\$ 82,687
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 413,435	\$ -	\$ -	\$ 413,435	\$ -	\$ 413,435
4.7	LIDAR	1.00	LS		\$ 14,884	\$ 9,922	\$ -	\$ 14,884	\$ 9,922	\$ 24,806
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,729	\$ 23,152	\$ -	\$ 34,729	\$ 23,152	\$ 57,881
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,687		\$ -	\$ 82,687	\$ -	\$ 82,687
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,806		\$ -	\$ 24,806	\$ -	\$ 24,806
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 320,000	\$ -	\$ -	\$ 320,000	\$ 320,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,155,935.10			\$ 369,047	\$ -	\$ -	\$ 369,047
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,269	\$ -	\$ -	\$ 8,269	\$ 8,269
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378

NEXtera Energy- TO37 Core 2	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO37 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 _Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contracct value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable.
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
42	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 3 circuits, 2 cable per circuit, so there are 6 passes.
43	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications -	
44	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
45	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
46	Substation pad is based on 8" base and 6" surfacing rock.
47	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
48	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
49	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
50	All substation segments construction period is based on milestone schedule provided

NEXtera Energy- TO38 Core 3		
Revision: 1		
NEXtera Energy- TO38 Core 3 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 71,756,341
Direct Labor, Material & Equipment Costs	2.Station 252 East Garden City 345/138 kV Substation Upgrades	\$ 169,585,051
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,095,138
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 322,019,268
Direct Labor, Material & Equipment Costs	12. Farragut 345kV Substation Expansion	\$ 67,975,498
Direct Labor, Material & Equipment Costs	13 - Northport 345/138kV AIS & 138KV GIS Substation	\$ 56,102,022
Direct Labor, Material & Equipment Costs	14.Pilgrim 138kV Substation Upgrades	\$ 1,090,486
Direct Labor, Material & Equipment Costs	15. Exisitng Ruland Road 138 kV Substation Upgrades	\$ 1,077,395
Direct Labor, Material & Equipment Costs	16. Existing East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 954,918,446
CONTRACTOR MARK-UP (OH&P)		\$ 153,400,520
SUBTOTAL (AFTER MU):		\$ 1,108,318,966
CONTINGENCY ON ENTIRE PROJECT		\$ 221,663,793
Substation TOTAL:		\$ 1,329,982,760
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(Northport To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 195,310,866
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 296,059,014
Direct Labor, Material & Equipment Costs	Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 398,396,284
Direct Labor, Material & Equipment Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit(EGC To Sprain Brook 345 kV)	\$ 117,895,360
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit(Pilgram to Northport kV)	\$ 93,067,293
Direct Labor, Material & Equipment Costs	Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit(EGC-Farragut 345kv)	\$ 131,952,439
Direct Labor, Material & Equipment Costs	Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$ 235,289,469
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 8,268,700
SUBTOTAL (Costs):		\$ 2,079,419,001
CONTRACTOR MARK-UP (OH&P)		\$ 374,295,420
SUBTOTAL (AFTER MU):		\$ 2,453,714,421
CONTINGENCY ON ENTIRE PROJECT		\$ 490,742,884
Transmission Line TOTAL:		\$ 2,944,457,306
NEXtera Energy- TO38 Core 3Total Direct Cost		\$ 4,274,440,065

NEXtera Energy- TO38 Core 3 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 21,452,240
Indirect Costs	2.Station 252 East Garden City 345/138 kV Substation Upgrades	\$ 79,716,796
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 334,752
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 99,114,306
Indirect Costs	12. Farragut 345kV Substation Expansion	\$ 18,896,969
Indirect Costs	13 - Northport 345/138kV AIS & 138KV GIS Substation	\$ 15,146,144
Indirect Costs	14.Pilgrim 138kV Substation Upgrades	\$ 347,380
Indirect Costs	15. Exisitng Ruland Road 138 kV Substation Upgrades	\$ 356,246
Indirect Costs	16. Existing East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 312,501,123
CONTRACTOR MARK-UP (OH&P)		\$ 56,250,202
SUBTOTAL (AFTER MU):		\$ 368,751,325
CONTINGENCY ON ENTIRE PROJECT		\$ 73,750,265
Substation TOTAL:		\$ 442,501,590
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(Northport To Dunwoodie 345 kV)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 49,373,632
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 74,702,824
Indirect Costs	Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 95,795,299
Indirect Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit(EGC To Sprain Brook 345 kV)	\$ 30,601,618
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 50,420,274
Indirect Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit(Pilgram to Northport kV)	\$ 23,919,365
Indirect Costs	Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit(EGC-Farragut 345kv)	\$ 34,205,384
Indirect Costs	Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$ 59,676,335
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,645,378
SUBTOTAL (Costs):		\$ 525,377,130
CONTRACTOR MARK-UP (OH&P)		\$ 94,567,883
SUBTOTAL (AFTER MU):		\$ 619,945,013
CONTINGENCY ON ENTIRE PROJECT		\$ 123,989,003
Transmission Line TOTAL:		\$ 743,934,016
NEXtera Energy- TO38 Core 3 Total Indirect Cost		\$ 1,186,435,606
NEXtera Energy- TO38 Core 3 Total		\$ 5,460,875,671

NEXtera Energy- TO38 Core 3

1. Station 29 New Ruland Road 345/138 kV Substation

Total: \$ 130,328,792

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,525,983	\$ 1,300,112	\$ 762,874	\$ 3,588,968
2. SUBSTATION FOUNDATIONS	\$ 2,268,952	\$ 2,565,809	\$ 1,604,887	\$ 6,439,648
3. SUBSTATION STRUCTURES	\$ 1,003,878	\$ 883,987	\$ 531,389	\$ 2,419,254
4. MAJOR EQUIPTMENT	\$ 33,974,138	\$ 6,680,324	\$ 4,252,876	\$ 44,907,338
5. LOW VOLTAGE & CONTROL CABLE	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH	\$ 3,830,653	\$ 2,117,722	\$ 1,141,383	\$ 7,089,758
7. GROUND GRID	\$ 197,725	\$ 142,339	\$ 33,060	\$ 373,123
8. CONTROL ENCLOSURE	\$ 3,191,085	\$ 2,611,419	\$ 973,666	\$ 6,776,170
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,660,765	\$ 12,690,935	\$ 4,100,541	\$ 21,452,240
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 45,030,551	\$ 25,578,737	\$ 11,109,293	\$ 81,718,582
SUBTOTAL (Costs):	\$ 50,775,551	\$ 29,025,737	\$ 13,407,293	\$ 93,208,582
CONTRACTOR MARK-UP (OH&P)	\$ 8,450,199	\$ 4,810,993	\$ 2,137,553	\$ 15,398,745
SUBTOTAL:	\$ 59,225,750	\$ 33,836,730	\$ 15,544,846	\$ 108,607,326
CONTINGENCY ON ENTIRE PROJECT	\$ 11,845,150	\$ 6,767,346	\$ 3,108,969	\$ 21,721,465
TOTAL:	\$ 71,070,900	\$ 40,604,076	\$ 18,653,815	\$ 130,328,792

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, and modification at exisitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1. Station 29 New Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 48,600	\$ 32,400	\$ 81,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,895	SY	4.85	7.20	4.80	\$ 18,890	\$ 28,042	\$ 18,695	\$ 65,627
1.4	Strip and Dispose Top Soil	7,260	CY		24.50	10.50	\$ -	\$ 177,870	\$ 76,230	\$ 254,100
1.5	Site Grading- Excavation for Substation Pad	21,780	CY		9.00	6.00	\$ -	\$ 196,020	\$ 130,680	\$ 326,700
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	11,761	CY		21.00	9.00	\$ -	\$ 246,985.20	\$ 105,850.80	\$ 352,836.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	17,642	CY		2.40	1.60	\$ -	\$ 42,340	\$ 28,227	\$ 70,567
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	11,761	CY	25.00	2.40	1.60	\$ 294,030	\$ 28,227	\$ 18,818	\$ 341,075
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,710	LF	13.85	13.85	6.92	\$ 23,680	\$ 23,680	\$ 11,840	\$ 59,200
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	15,000	SF	1.50	1.50	1.00	\$ 22,500	\$ 22,500	\$ 15,000	\$ 60,000
1.17	Erosion Control-Silt fence install & remove	2,700	LF	2.41	3.16	0.72	\$ 6,507	\$ 8,532	\$ 1,944	\$ 16,983
1.18	Temporary fencing	1,800	LF	7.50	5.25	2.25	\$ 13,500	\$ 9,450	\$ 4,050	\$ 27,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	4,500	SY	19.50	26.00	19.50	\$ 87,750	\$ 117,000	\$ 87,750	\$ 292,500
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,525,983	\$ 1,300,112	\$ 762,874	\$ 3,588,968
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	127	CY	703.89	804.44	502.78	\$ 89,196	\$ 101,939	\$ 63,712	\$ 254,847
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	230	CY	703.89	804.44	502.78	\$ 161,668	\$ 184,764	\$ 115,477	\$ 461,909
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.31	Precast Firewall for transformer, PARs, reactors	2,010	SF	25.00	15.00	10.00	\$ 50,250	\$ 30,150	\$ 20,100	\$ 100,500
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 2,268,952	\$ 2,565,809	\$ 1,604,887	\$ 6,439,648
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	-	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	-	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.4	345kV, Bus support-3 Ph, low	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	29	EA	4,810.00	2,886.00	1,924.00	\$ 139,490	\$ 83,694	\$ 55,796	\$ 278,980
3.6	345kV, GIS air terminal	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	-	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	-	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	8	EA	19,240.00	11,544.00	7,696.00	\$ 153,920	\$ 92,352	\$ 61,568	\$ 307,840
3.13	138kV, Bus support-3 Ph, low	-	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	-	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	-	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	-	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	-	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor	-	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor-elbow	-	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus Tubing, 5" SCH 80	1,950	LF	25.00	184.94	123.29	\$ 48,750	\$ 360,629	\$ 240,419	\$ 649,799
3.23	AL Bus fittings	1	LS	58,500.00	58,500.00	29,250.00	\$ 58,500	\$ 58,500	\$ 29,250	\$ 146,250

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	Steel grating and support beams-transformer moat	173,120	LB	2.73	1.17	0.50	\$ 472,932	\$ 202,377	\$ 86,733	\$ 762,043
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,003,878	\$ 883,987	\$ 531,389	\$ 2,419,254
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	-	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	-	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	-	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	8	EA	57,720.00	34,632.00	23,088.00	\$ 461,760	\$ 277,056	\$ 184,704	\$ 923,520
4.6	345/138KV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800
4.7	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-100MVAR	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	12,882,000.00	3,520.00	880.00	\$ 12,882,000	\$ 3,520	\$ 880	\$ 12,886,400
4.10	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.12	345kV, Circuit Breaker (PASS)	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.13	345kV, Circuit Breaker (GIS), outdoor rated	-	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	-	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.16	138kV, Phase Angle Regulator with oil containment	-	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	-	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.19	138kV, Circuit Breaker, Hybrid circuit breaker	-	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Disconnect Switch	-	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	138kV, CCVT	-	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 33,974,138	\$ 6,680,324	\$ 4,252,876	\$ 44,907,338
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	23,100	LF	5.30	1.43	0.29	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,500	LF	11.15	10.80	5.40	\$ 50,175	\$ 48,600	\$ 24,300	\$ 123,075
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.11	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.12	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,830,653	\$ 2,117,722	\$ 1,141,383	\$ 7,089,758
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	20,055	LF	2.09	3.42	1.46	\$ 41,935	\$ 68,494	\$ 29,355	\$ 139,783
7.2	Caweld, DSA, 4/0 , T, CROSS	540	EA	165.00	75.00		\$ 89,100	\$ 40,500	\$ -	\$ 129,600
7.3	Ground Rod, 3/4" x 15'	494	EA	135.00	67.50	7.50	\$ 66,690	\$ 33,345	\$ 3,705	\$ 103,740
TOTAL - GROUND GRID							\$ 197,725	\$ 142,339	\$ 33,060	\$ 373,123
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.15	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,191,085	\$ 2,611,419	\$ 973,666	\$ 6,776,170
1. Station 29 New Ruland Road 345/138 kV Substation							\$ 46,114,786	\$ 16,334,802	\$ 9,306,753	\$ 71,756,341
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		696,379.43	298,448.33	\$ -	\$ 696,379	\$ 298,448	\$ 994,828
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,410,653.65		\$ -	\$ 2,410,654	\$ -	\$ 2,410,654
9.4	Utility PM and Project Oversight	1	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.5	Site Accommodation, Facilities, Storage	1	LS	602,663.41			\$ 602,663	\$ -	\$ -	\$ 602,663
	Engineering									
9.6	Design Engineering	1.00	LS		4,821,307.30		\$ -	\$ 4,821,307	\$ -	\$ 4,821,307
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		421,864.39		\$ -	\$ 421,864	\$ -	\$ 421,864
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,259,987.80		\$ -	\$ 2,259,988	\$ -	\$ 2,259,988
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		180,799.02		\$ -	\$ 180,799	\$ -	\$ 180,799
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,600,000	\$ -	\$ -	\$ 2,600,000	\$ 2,600,000
9.20	Sales Tax on Materials	8.80%	LS	46,114,786.29			\$ 4,058,101	\$ -	\$ -	\$ 4,058,101
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		71,756.34		\$ -	\$ 71,756	\$ -	\$ 71,756
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,660,765	\$ 12,690,935	\$ 4,100,541	\$ 21,452,240

NEXtera Energy- TO38 Core 3

2.Station 252 East Garden City 345/138 kV Substation Upgrades

Total: \$ 347,939,735

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 252 East Garden City 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS	\$ 6,183,051	\$ 6,672,230	\$ 4,188,294	\$ 17,043,576
3. SUBSTATION STRUCTURES	\$ 2,079,686	\$ 1,420,019	\$ 821,171	\$ 4,320,876
4. MAJOR EQUIPMENT	\$ 86,834,800	\$ 16,766,972	\$ 11,053,048	\$ 114,654,820
5. LOW VOLTAGE & CONTROL CABLE	\$ 138,265	\$ 37,388	\$ 7,478	\$ 183,131
6. CONDUIT & CABLE TRENCH	\$ 8,746,451	\$ 4,970,057	\$ 2,720,221	\$ 16,436,729
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE	\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,154,293	\$ 28,760,396	\$ 39,802,107	\$ 79,716,796
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 105,028,869	\$ 54,574,217	\$ 54,478,761	\$ 214,081,847
SUBTOTAL (Costs):	\$ 122,638,869	\$ 65,140,217	\$ 61,522,761	\$ 249,301,847
CONTRACTOR MARK-UP (OH&P)	\$ 19,961,796	\$ 10,457,319	\$ 10,228,817	\$ 40,647,932
SUBTOTAL:	\$ 142,600,665	\$ 75,597,536	\$ 71,751,578	\$ 289,949,779
CONTINGENCY ON ENTIRE PROJECT	\$ 28,520,133	\$ 15,119,507	\$ 14,350,316	\$ 57,989,956
TOTAL:	\$ 171,120,798	\$ 90,717,043	\$ 86,101,894	\$ 347,939,735

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 252 East Garden City 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.4	345kV, Bus support-3 Ph, low	332	CY	703.89	804.44	502.78	\$ 233,549	\$ 266,913	\$ 166,821	\$ 667,283
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	277	CY	703.89	804.44	502.78	\$ 195,117	\$ 222,991	\$ 139,369	\$ 557,477
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	107	CY	703.89	804.44	502.78	\$ 75,316	\$ 86,075	\$ 53,797	\$ 215,188
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.17	345kV, Phase Angle Regulator with oil containment	1,780	CY	703.89	804.44	502.78	\$ 1,252,915	\$ 1,431,903	\$ 894,940	\$ 3,579,758
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.21	345kV, Surge arrester	161	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	1,917	CY	703.89	804.44	502.78	\$ 1,349,094	\$ 1,541,822	\$ 963,639	\$ 3,854,555
2.31	Precast Firewall for transformer, PARs, reactors	29,040	SF	25.00	15.00	10.00	\$ 726,000	\$ 435,600	\$ 290,400	\$ 1,452,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 6,183,051	\$ 6,672,230	\$ 4,188,294	\$ 17,043,576
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.4	345kV, Bus support-3 Ph, low	30	EA	8,346.00	5,758.74	3,839.16	\$ 250,380	\$ 172,762	\$ 115,175	\$ 538,317
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	21	EA	8,346.00	5,758.74	3,839.16	\$ 175,266	\$ 120,934	\$ 80,622	\$ 376,822
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,900	LF	25.00	184.94	123.29	\$ 47,500	\$ 351,382	\$ 234,255	\$ 633,137
3.22	AL. Bus fittings	1	LS	57,000.00	57,000.00	45,000.00	\$ 57,000	\$ 57,000	\$ 45,000	\$ 159,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.23	Steel grating and support beams-transformer moat	476,080	LB	2.73	1.17	0.50	\$ 1,300,564	\$ 556,538	\$ 238,516	\$ 2,095,617
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 2,079,686	\$ 1,420,019	\$ 821,171	\$ 4,320,876
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	21	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	30	EA	17,400.00	5,460.00	2,340.00	\$ 522,000	\$ 163,800	\$ 70,200	\$ 756,000
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	2	EA	3,026,425.00	3,520.00	880.00	\$ 6,052,850	\$ 7,040	\$ 1,760	\$ 6,061,650
4.9	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.11	Transport & Testing- Shunt Reactor	7	EA		457,900.00	301,600.00	\$ -	\$ 3,205,300	\$ 2,111,200	\$ 5,316,500
4.12	345kV, Phase Angle Regulator with oil containment	4	EA	12,882,000.00	3,520.00	880.00	\$ 51,528,000	\$ 14,080	\$ 3,520	\$ 51,545,600
4.7	Transport & Testing- PAR	4	EA		615,400.00	406,600.00	\$ -	\$ 2,461,600	\$ 1,626,400	\$ 4,088,000
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.18	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 86,834,800	\$ 16,766,972	\$ 11,053,048	\$ 114,654,820
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	26,100	LF	5.30	1.43	0.29	\$ 138,265	\$ 37,388	\$ 7,478	\$ 183,131
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 138,265	\$ 37,388	\$ 7,478	\$ 183,131
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,400	LF	11.15	10.80	5.40	\$ 60,210	\$ 58,320	\$ 29,160	\$ 147,690
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,746,451	\$ 4,970,057	\$ 2,720,221	\$ 16,436,729
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0 , T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	11	EA	21,328.12	17,062.49	4,265.62	\$ 234,609	\$ 187,687	\$ 46,922	\$ 469,219

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.4	Backup Line Relays (87L): GE L90	11	EA	21,328.12	17,062.49	4,265.62	\$ 234,609	\$ 187,687	\$ 46,922	\$ 469,219
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.22	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.23	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
2.Station 252 East Garden City 345/138 kV Substation Upgrades							\$ 111,484,576	\$ 36,379,821	\$ 21,720,654	\$ 169,585,051
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,033,516.63	871,507.13	\$ -	\$ 2,033,517	\$ 871,507	\$ 2,905,024
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,343,650.51		\$ -	\$ 1,343,651	\$ -	\$ 1,343,651
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		5,374,602.02		\$ -	\$ 5,374,602	\$ -	\$ 5,374,602
9.4	Utility PM and Project Oversight	1	LS		1,343,650.51		\$ -	\$ 1,343,651	\$ -	\$ 1,343,651
9.5	Site Accommodation, Facilities, Storage	1	LS	1,343,650.51			\$ 1,343,651	\$ -	\$ -	\$ 1,343,651
	Engineering									
9.6	Design Engineering	1.00	LS		10,749,204.05		\$ -	\$ 10,749,204	\$ -	\$ 10,749,204
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		940,555.35		\$ -	\$ 940,555	\$ -	\$ 940,555
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		5,038,689.40		\$ -	\$ 5,038,689	\$ -	\$ 5,038,689
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,343,650.51		\$ -	\$ 1,343,651	\$ -	\$ 1,343,651
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		403,095.15		\$ -	\$ 403,095	\$ -	\$ 403,095
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 6,940,000	\$ -	\$ -	\$ 6,940,000	\$ 6,940,000
9.20	Sales Tax on Materials	8.80%	LS	111,484,575.51			\$ 9,810,643	\$ -	\$ -	\$ 9,810,643
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		169,585.05		\$ -	\$ 169,585	\$ -	\$ 169,585
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,154,293	\$ 28,760,396	\$ 39,802,107	\$ 79,716,796

NEXTera Energy- TO38 Core 3

3.Station 48 Valley Stream 345/138 kV Substation Upgrades

Total: \$ 143,522,216

NEXTera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPTMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.Station 48 Valley Stream 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	620,000.00	415,000.00	\$ -	\$ 620,000	\$ 415,000	\$ 1,035,000
1.3	New Access Road - 20'	889	SY	4.85	7.20	4.80	\$ 4,312	\$ 6,401	\$ 4,267	\$ 14,980
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	11,761	CY		9.00	6.00	\$ -	\$ 105,849	\$ 70,566	\$ 176,415
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,057	CY		2.40	1.60	\$ -	\$ 16,937	\$ 11,291	\$ 28,228
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,704	CY	25.00	2.40	1.60	\$ 117,600	\$ 11,290	\$ 7,526	\$ 136,416
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,712	SY	11.00	6.00	4.00	\$ 95,832	\$ 52,272	\$ 34,848	\$ 182,952
1.11	Site Surfacing - Aggregate 6" Thick	8,712	SY	16.50	4.50	3.00	\$ 143,748	\$ 39,204	\$ 26,136	\$ 209,088
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,222	LF	13.85	13.85	6.92	\$ 30,770	\$ 30,770	\$ 15,385	\$ 76,926
1.13	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
1.14	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,583	LF	2.41	3.16	0.72	\$ 6,225	\$ 8,162	\$ 1,860	\$ 16,247
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	333	SY	19.50	26.00	19.50	\$ 6,500	\$ 8,667	\$ 6,500	\$ 21,667

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS	-	-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

NEXtera Energy- TO38 Core 3

4.Barrett 138 kV Substation Upgrades

Total: \$ 77,248,534

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
4.Barrett 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,399.86
2. SUBSTATION FOUNDATIONS	\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,923.90
3. SUBSTATION STRUCTURES	\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,415.76
4. MAJOR EQUIPMENT	\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679.20
6. CONDUIT & CABLE TRENCH	\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,906.57
7. GROUND GRID	\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125.40
8. CONTROL ENCLOSURE	\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,873.67
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 22,313,583	\$ 13,117,388	\$ 8,801,554	\$ 44,232,524
SUBTOTAL (Costs):	\$ 28,058,583	\$ 16,564,388	\$ 11,099,554	\$ 55,722,524
CONTRACTOR MARK-UP (OH&P)	\$ 4,361,145	\$ 2,567,950	\$ 1,722,160	\$ 8,651,254
SUBTOTAL:	\$ 32,419,728	\$ 19,132,338	\$ 12,821,713	\$ 64,373,779
CONTINGENCY ON ENTIRE PROJECT	\$ 6,483,946	\$ 3,826,468	\$ 2,564,343	\$ 12,874,756
TOTAL:	\$ 38,903,673	\$ 22,958,805	\$ 15,386,056	\$ 77,248,534

Description of Work: Construct a new Barrett 138kV GIS substation adjacent to the existing Barrett 138kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 23,760	\$ 15,840	\$ 39,600
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,115	SY	4.85	7.20	4.80	\$ 10,257	\$ 15,227	\$ 10,151	\$ 35,636
1.4	Strip and Dispose Top Soil	3,549	CY		24.50	10.50	\$ -	\$ 86,959	\$ 37,268	\$ 124,227
1.5	Site Grading- Excavation for Substation Pad	10,648	CY		9.00	6.00	\$ -	\$ 95,832	\$ 63,888	\$ 159,720
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	5,750	CY		21.00	9.00	\$ -	\$ 120,748.32	\$ 51,749.28	\$ 172,497.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	8,625	CY		2.40	1.60	\$ -	\$ 20,700	\$ 13,800	\$ 34,500
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	5,750	CY	25.00	2.40	1.60	\$ 143,748	\$ 13,800	\$ 9,200	\$ 166,748
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	10,648	SY	11.00	6.00	4.00	\$ 117,128	\$ 63,888	\$ 42,592	\$ 223,608
1.11	Site Surfacing - Aggregate 6" Thick	10,648	SY	16.50	4.50	3.00	\$ 175,692	\$ 47,916	\$ 31,944	\$ 255,552
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,056	LF	13.85	13.85	6.92	\$ 14,623	\$ 14,623	\$ 7,312	\$ 36,559
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	8,896	SF	1.50	1.50	1.00	\$ 13,344	\$ 13,344	\$ 8,896	\$ 35,584
1.17	Erosion Control-Silt fence install & remove	1,620	LF	2.41	3.16	0.72	\$ 3,904	\$ 5,119	\$ 1,166	\$ 10,190

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.18	Temporary fencing	1,080	LF	7.50	5.25	2.25	\$ 8,100	\$ 5,670	\$ 2,430	\$ 16,200
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL. Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

<u>NEXtera Energy- TO38 Core 3</u>	
<u>5.Dunwoodie 345 kV GIS Substation</u>	
Total:	\$ 64,677,743

<u>NEXtera Energy- TO38 Core 3</u>	
<u>5.Dunwoodie 345 kV GIS Substation</u>	
Total:	\$ 64,677,743

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
5.Dunwoodie 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS	\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT	\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID	\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE	\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 11,599,927	\$ 9,176,864	\$ 6,637,039	\$ 27,413,830
SUBTOTAL (Costs):	\$ 21,764,927	\$ 15,275,864	\$ 10,703,039	\$ 47,743,830
CONTRACTOR MARK-UP (OH&P)	\$ 2,697,887	\$ 2,017,775	\$ 1,438,627	\$ 6,154,289
SUBTOTAL:	\$ 24,462,814	\$ 17,293,639	\$ 12,141,665	\$ 53,898,119
CONTINGENCY ON ENTIRE PROJECT	\$ 4,892,563	\$ 3,458,728	\$ 2,428,333	\$ 10,779,624
TOTAL:	\$ 29,355,377	\$ 20,752,367	\$ 14,569,999	\$ 64,677,743

Description of Work: Construct a new Dunwoodie 345kV GIS substation. Loop in the Pleasantville (2) and Sprain Brook lines and connect back to the existing Dunwoodie 345kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5.Dunwoodie 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 17,137	\$ 11,425	\$ 28,562
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,263	SY	4.85	7.20	4.80	\$ 6,124	\$ 9,092	\$ 6,061	\$ 21,278
1.4	Strip and Dispose Top Soil	2,560	CY		24.50	10.50	\$ -	\$ 62,720	\$ 26,880	\$ 89,600
1.5	Site Grading- Excavation for Substation Pad	7,680	CY		9.00	6.00	\$ -	\$ 69,120	\$ 46,080	\$ 115,200
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	4,147	CY		21.00	9.00	\$ -	\$ 87,091.20	\$ 37,324.80	\$ 124,416.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	6,221	CY		2.40	1.60	\$ -	\$ 14,930	\$ 9,953	\$ 24,883
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,147	CY	25.00	2.40	1.60	\$ 103,680	\$ 9,953	\$ 6,636	\$ 120,269
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	7,680	SY	11.00	6.00	4.00	\$ 84,480	\$ 46,080	\$ 30,720	\$ 161,280
1.11	Site Surfacing - Aggregate 6" Thick	7,680	SY	16.50	4.50	3.00	\$ 126,720	\$ 34,560	\$ 23,040	\$ 184,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	864	LF	13.85	13.85	6.92	\$ 11,965	\$ 11,965	\$ 5,982	\$ 29,912
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	325,073.45	83,781.82	55,348.36	\$ 325,073	\$ 83,782	\$ 55,348	\$ 464,204
1.16	Seeding	7,296	SF	1.50	1.50	1.00	\$ 10,944	\$ 10,944	\$ 7,296	\$ 29,184
1.17	Erosion Control-Silt fence install & remove	2,100	LF	2.41	3.16	0.72	\$ 5,061	\$ 6,636	\$ 1,512	\$ 13,209
1.18	Temporary fencing	1,400	LF	7.50	5.25	2.25	\$ 10,500	\$ 7,350	\$ 3,150	\$ 21,000
1.19	Substation entrance with asphalt	486	SY	19.50	26.00	19.50	\$ 9,479	\$ 12,639	\$ 9,479	\$ 31,597

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16			\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
4.28	Transport & Testing- GIL	0	LS		-	-				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
5.Dunwoodie 345 kV GIS Substation							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931
9.4	Utility PM and Project Oversight	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733
	Engineering									
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565

NEXTera Energy- TO38 Core 3

6.Elwood 138 kV Substation Upgrades

Total: \$ 7,946,839

NEXTera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPTMENT	\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563
SUBTOTAL (Costs):	\$ 3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$ 692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$ 4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$ 908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$ 5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVAR reactor (1 block) at the exisitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVAR)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40	600	LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

NEXtera Energy- TO38 Core 3

7.Jamaica 138 kV Substation Upgrades

Total:

Total: \$2,024,724

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
7.Jamaica 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES	\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT	\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752
SUBTOTAL (Costs):	\$ 658,333	\$ 579,029	\$ 192,528	\$ 1,429,890
CONTRACTOR MARK-UP (OH&P)	\$ 118,500	\$ 104,225	\$ 34,655	\$ 257,380
SUBTOTAL:	\$ 776,832	\$ 683,255	\$ 227,183	\$ 1,687,270
CONTINGENCY ON ENTIRE PROJECT	\$ 155,366	\$ 136,651	\$ 45,437	\$ 337,454
TOTAL:	\$ 932,199	\$ 819,906	\$ 272,620	\$ 2,024,724

Description of Work: Add an additional terminal at the existing Jamaica 138kV substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345/138kV Gas-Insulated Bus Conductor	246	LF	550.00	275.00	82.50	\$ 135,300	\$ 67,650	\$ 20,295	\$ 223,245
4.30	345/138kV Gas-Insulated Bus Conductor-elbow	6	EA	2,500.00	1,250.00	375.00	\$ 15,000	\$ 7,500	\$ 2,250	\$ 24,750
4.31	Transport & Testing- GIL	1	LS		27,054.00	18,036.00	\$ -	\$ 27,054	\$ 18,036	\$ 45,090
TOTAL - MAJOR EQUIPMENT							\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
7.Jamaica 138 kV Substation Upgrades							\$ 595,020	\$ 355,092	\$ 145,026	\$ 1,095,138
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,504.13	7,501.77	\$ -	\$ 17,504	\$ 7,502	\$ 25,006
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,805.51		\$ -	\$ 43,806	\$ -	\$ 43,806
9.4	Utility PM and Project Oversight	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.5	Site Accommodation, Facilities, Storage	1	LS	10,951.38			\$ 10,951	\$ -	\$ -	\$ 10,951
	Engineering									
9.6	Design Engineering	1.00	LS		87,611.01		\$ -	\$ 87,611	\$ -	\$ 87,611
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,665.96		\$ -	\$ 7,666	\$ -	\$ 7,666
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		41,067.66		\$ -	\$ 41,068	\$ -	\$ 41,068
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		10,951.38		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,285.41		\$ -	\$ 3,285	\$ -	\$ 3,285
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	595,019.53			\$ 52,362	\$ -	\$ -	\$ 52,362
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,095.14		\$ -	\$ 1,095	\$ -	\$ 1,095
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752

NEXTera Energy- TO38 Core 3

8.Newbridge 345/138 kV GIS Substation Upgrades

Total: \$ 89,858,233

NEXTera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPTMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION	#REF!									
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138kV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Anr	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
	Engineering									
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

<u>NEXtera Energy- TO38 Core 3</u>	
<u>9.Rainey 345kV GIS Substation Upgrades</u>	
Total:	\$ 45,946,157

	NEXtera Energy- TO38 Core 3							
		Material Supply	Labor Supply	Equip Supply	Total			
9.Rainey 345kV GIS Substation Upgrades								
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$	311,324	\$	248,835	\$	141,711	\$	701,870
2. SUBSTATION FOUNDATIONS	\$	802,429	\$	917,062	\$	573,164	\$	2,292,654
3. SUBSTATION STRUCTURES	\$	-	\$	-	\$	-	\$	-
4. MAJOR EQUIPTMENT	\$	5,130,000	\$	3,078,000	\$	2,052,000	\$	10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$	-	\$	-	\$	-	\$	-
6. CONDUIT & CABLE TRENCH	\$	3,027,905	\$	1,824,211	\$	1,037,159	\$	5,889,274
7. GROUND GRID	\$	41,114	\$	27,100	\$	5,201	\$	73,415
8. CONTROL ENCLOSURE	\$	3,173,654	\$	2,446,529	\$	976,124	\$	6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$	1,254,341	\$	3,460,378	\$	2,963,002	\$	7,677,720
Turnkey cost (HVDC, GIS)	\$	5,130,000	\$	3,078,000	\$	2,052,000	\$	10,260,000
Non-Turnkey cost	\$	8,610,766	\$	8,924,115	\$	5,696,359	\$	23,231,241
SUBTOTAL (Costs):	\$	13,740,766	\$	12,002,115	\$	7,748,359	\$	33,491,241
CONTRACTOR MARK-UP (OH&P)	\$	1,857,738	\$	1,791,021	\$	1,148,465	\$	4,797,223
SUBTOTAL:	\$	15,598,504	\$	13,793,136	\$	8,896,824	\$	38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$	3,119,701	\$	2,758,627	\$	1,779,365	\$	7,657,693
TOTAL:	\$	18,718,205	\$	16,551,763	\$	10,676,189	\$	45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.Rainey 345kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,856	\$ 5,904	\$ 14,760
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	989	SY	4.85	7.20	4.80	\$ 4,796	\$ 7,120	\$ 4,747	\$ 16,663
1.4	Strip and Dispose Top Soil	1,323	CY		24.50	10.50	\$ -	\$ 32,412	\$ 13,891	\$ 46,303
1.5	Site Grading- Excavation for Substation Pad	3,969	CY		9.00	6.00	\$ -	\$ 35,719	\$ 23,813	\$ 59,532
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,143	CY		21.00	9.00	\$ -	\$ 45,006.19	\$ 19,288.37	\$ 64,294.56
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,215	CY		2.40	1.60	\$ -	\$ 7,715	\$ 5,144	\$ 12,859
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,143	CY	25.00	2.40	1.60	\$ 53,579	\$ 5,144	\$ 3,429	\$ 62,151
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,969	SY	11.00	6.00	4.00	\$ 43,657	\$ 23,813	\$ 15,875	\$ 83,345
1.11	Site Surfacing - Aggregate 6" Thick	3,969	SY	16.50	4.50	3.00	\$ 65,485	\$ 17,860	\$ 11,906	\$ 95,251
1.12	7' Station Fence w/ Barbed Wire & Grounding	726	LF	13.85	13.85	6.92	\$ 10,054	\$ 10,054	\$ 10,054	\$ 25,134
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	109,761.60	38,400.00	25,368.00	\$ 109,762	\$ 38,400	\$ 25,368	\$ 173,530
1.16	Seeding	3,000	SF	1.50	1.50	1.00	\$ 4,500	\$ 4,500	\$ 3,000	\$ 12,000
1.17	Erosion Control-Silt fence install & remove	1,200	LF	2.41	3.16	0.72	\$ 2,892	\$ 3,792	\$ 864	\$ 7,548
1.18	Temporary fencing	800	LF	7.50	5.25	2.25	\$ 6,000	\$ 4,200	\$ 1,800	\$ 12,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
	Engineering									
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

<u>NEXtera Energy- TO38 Core 3</u>	
<u>10.Shore Road 138kV Substation Upgrades</u>	
Total:	\$ 13,943,860

<u>NEXtera Energy- TO38 Core 3</u>	
<u>10.Shore Road 138kV Substation Upgrades</u>	
Total:	\$ 13,943,860

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
10.Shore Road 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS	\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES	\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT	\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936
SUBTOTAL (Costs):	\$ 6,942,247	\$ 2,219,499	\$ 685,612	\$ 9,847,359
CONTRACTOR MARK-UP (OH&P)	\$ 1,249,604	\$ 399,510	\$ 123,410	\$ 1,772,525
SUBTOTAL:	\$ 8,191,851	\$ 2,619,009	\$ 809,023	\$ 11,619,883
CONTINGENCY ON ENTIRE PROJECT	\$ 1,638,370	\$ 523,802	\$ 161,805	\$ 2,323,977
TOTAL:	\$ 9,830,222	\$ 3,142,811	\$ 970,827	\$ 13,943,860

[illegible]

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL. Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534
	Engineering									
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

NEXTera Energy- TO38 Core 3

11.Sprain Brook 345kV Substation Expansion

Total: \$ 596,325,142

NEXTera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
11.Sprain Brook 345kV Substation Expansion				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS	\$ 1,920,956	\$ 2,166,878	\$ 1,355,611	\$ 5,443,445
3. SUBSTATION STRUCTURES	\$ 1,075,966	\$ 901,681	\$ 569,078	\$ 2,546,726
4. MAJOR EQUIPTMENT	\$ 10,402,779	\$ 1,823,144	\$ 1,072,736	\$ 13,298,659
5. LOW VOLTAGE & CONTROL CABLE	\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
6. CONDUIT & CABLE TRENCH	\$ 627,979	\$ 194,488	\$ 70,492	\$ 892,959
7. GROUND GRID	\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE	\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,237,695	\$ 73,613,826	\$ 18,262,785	\$ 99,114,306
SUBTOTAL (Costs):	\$ 52,891,131	\$ 204,429,946	\$ 163,812,498	\$ 421,133,575
CONTRACTOR MARK-UP (OH&P)	\$ 9,520,404	\$ 36,797,390	\$ 29,486,250	\$ 75,804,043
SUBTOTAL:	\$ 62,411,534	\$ 241,227,336	\$ 193,298,748	\$ 496,937,618
CONTINGENCY ON ENTIRE PROJECT	\$ 12,482,307	\$ 48,245,467	\$ 38,659,750	\$ 99,387,524
TOTAL:	\$ 74,893,841	\$ 289,472,804	\$ 231,958,497	\$ 596,325,142

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11.Sprain Brook 345kV Substation Expansion										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.4	ACRE	-	42,000.00	28,000.00	\$ -	\$ 224,902	\$ 149,935	\$ 374,837
1.2	Demolition	1	LS	-	120,000.00	80,000.00	\$ -	\$ 120,000	\$ 80,000	\$ 200,000
1.3	New Access Road - 20'	3,631	SY	4.85	7.20	4.80	\$ 17,611	\$ 26,144	\$ 17,429	\$ 61,184
1.4	Strip and Dispose Top Soil	8,639	CY		24.50	10.50	\$ -	\$ 211,658	\$ 90,711	\$ 302,369
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	56,901	CY		9.00	6.00	\$ -	\$ 512,110	\$ 341,407	\$ 853,517
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	227,604	CY		120.00	180.00	\$ -	\$ 27,312,533	\$ 40,968,800	\$ 68,281,333
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	384,083	CY		21.00	9.00	\$ -	\$ 8,065,732.50	\$ 3,456,742.50	\$ 11,522,475
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	11,380	SY	11.00	6.00	4.00	\$ 125,182	\$ 68,281	\$ 45,521	\$ 238,985
1.12	Site Surfacing - Aggregate 6" Thick	11,380	SY	16.50	4.50	3.00	\$ 187,774	\$ 51,211	\$ 34,141	\$ 273,125
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,300	LF	13.85	13.85	6.92	\$ 18,002	\$ 18,002	\$ 9,001	\$ 45,006
1.14	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.15	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	219,523.20	76,800.00	50,736.00	\$ 219,523	\$ 76,800	\$ 50,736	\$ 347,059
1.17	Seeding	130,834	SF	1.50	1.50	1.00	\$ 196,251	\$ 196,251	\$ 130,834	\$ 523,336
1.18	Erosion Control-Silt fence install & remove	3,900	LF	2.41	3.16	0.72	\$ 9,399	\$ 12,324	\$ 2,808	\$ 24,531

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Temporary fencing	1,430	LF	7.50	5.25	2.25	\$ 10,725	\$ 7,508	\$ 3,218	\$ 21,450
1.20	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Concrete Retaining Wall- Soil excavation	\$ 99,073	CY		9.00	6.00	\$ -	\$ 891,661	\$ 594,440	\$ 1,486,101
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727
1.26	Concrete Retaining WallI- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	350	CY	703.89	804.44	502.78	\$ 246,360	\$ 281,554	\$ 175,971	\$ 703,885
2.15	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,920,956	\$ 2,166,878	\$ 1,355,611	\$ 5,443,445
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,075,966	\$ 901,681	\$ 569,078	\$ 2,546,726
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	16	EA	57,720.00	34,632.00	23,088.00	\$ 923,520	\$ 554,112	\$ 369,408	\$ 1,847,040
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,487.50	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.10	Transport & Testing- Shunt Reactor	2	EA		352,900.00	231,600.00	\$ -	\$ 705,800	\$ 463,200	\$ 1,169,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	641,250.00	384,750.00	256,500.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker	8	EA	350,000.00	57,239.00	24,531.00	\$ 2,800,000	\$ 457,912	\$ 196,248	\$ 3,454,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,194,419.50	716,651.70	477,767.80	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,402,779	\$ 1,823,144	\$ 1,072,736	\$ 13,298,659
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	43,800	LF	5.30	1.43	0.29	\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,100	LF	11.15	10.80	5.40	\$ 90,315	\$ 87,480	\$ 43,740	\$ 221,535
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,018	LF	266.50	53.04	13.26	\$ 537,664	\$ 107,008	\$ 26,752	\$ 671,424
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00				\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00				\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28				\$ -
6.11	345kV UG- Conduit	466	LF	266.73	202.15	100.00				\$ -
6.12	345kV UG- Cable	1,398	LF	167.00	100.20	66.80				\$ -
6.13	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				\$ -
6.14	Fiber Optic Cable	466	LF	7.40	3.33	2.22				\$ -
6.15	Ground Continuity Conductor	466	LF	13.04	7.53	5.02				\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 627,979	\$ 194,488	\$ 70,492	\$ 892,959

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,277	LF	2.09	3.42	1.46	\$ 36,126	\$ 59,006	\$ 25,288	\$ 120,421
7.2	Caweld, DSA, 4/0 , T, CROSS	462	EA	165.00	75.00		\$ 76,230	\$ 34,650	\$ -	\$ 110,880
7.3	Ground Rod, 3/4" x 15'	410	EA	135.00	67.50	7.50	\$ 55,350	\$ 27,675	\$ 3,075	\$ 86,100
TOTAL - GROUND GRID							\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	542,947.99	380,063.60	162,884.40	\$ 542,948	\$ 380,064	\$ 162,884	\$ 1,085,896
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
11.Sprain Brook 345kV Substation Expansion							\$ 45,653,436	\$ 130,816,120	\$ 145,549,713	\$ 322,019,268
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,672,804.15	4,145,487.49	\$ -	\$ 9,672,804	\$ 4,145,487	\$ 13,818,292
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		12,880,770.74		\$ -	\$ 12,880,771	\$ -	\$ 12,880,771
9.4	Utility PM and Project Oversight	1	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.5	Site Accommodation, Facilities, Storage	1	LS	3,220,192.68			\$ 3,220,193	\$ -	\$ -	\$ 3,220,193
	Engineering									
9.6	Design Engineering	1.00	LS		25,761,541.47		\$ -	\$ 25,761,541	\$ -	\$ 25,761,541
9.7	LIDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,254,134.88		\$ -	\$ 2,254,135	\$ -	\$ 2,254,135
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		12,075,722.57		\$ -	\$ 12,075,723	\$ -	\$ 12,075,723
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		966,057.81		\$ -	\$ 966,058	\$ -	\$ 966,058
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,124,464.00	\$ -	\$ -	\$ 2,124,464	\$ 2,124,464
9.17	Legal Fees (Real estate)	1.00	LS		-	63,733.92	\$ -	\$ -	\$ 63,734	\$ 63,734
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 11,920,000	\$ -	\$ -	\$ 11,920,000	\$ 11,920,000
9.20	Sales Tax on Materials	8.80%	LS	45,653,435.63			\$ 4,017,502	\$ -	\$ -	\$ 4,017,502
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		322,019.27		\$ -	\$ 322,019	\$ -	\$ 322,019
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,237,695	\$ 73,613,826	\$ 18,262,785	\$ 99,114,306

<u>NEXtera Energy- TO38 Core 3</u>		
<u>12. Farragut 345kV Substation Expansion</u>		
Total:	\$	121,533,973

<u>NEXtera Energy- TO38 Core 3</u>		
<u>12. Farragut 345kV Substation Expansion</u>		
Total:	\$	121,533,973

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
12. Farragut 345kV Substation Expansion				
1. MARINE CONSTRUCITON CIVIL	\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS	\$ 645,162	\$ 683,178	\$ 429,480	\$ 1,757,821
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT	\$ 7,759,517	\$ 3,374,420	\$ 2,244,480	\$ 13,378,417
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID	\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE	\$ 2,516,145	\$ 1,907,422	\$ 727,723	\$ 5,151,291
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,919,583	\$ 12,927,931	\$ 3,049,455	\$ 18,896,969
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 24,408,083	\$ 33,263,982	\$ 18,940,401	\$ 76,612,467
SUBTOTAL (Costs):	\$ 29,538,083	\$ 36,341,982	\$ 20,992,401	\$ 86,872,467
CONTRACTOR MARK-UP (OH&P)	\$ 4,701,255	\$ 6,172,197	\$ 3,532,392	\$ 14,405,844
SUBTOTAL:	\$ 34,239,338	\$ 42,514,179	\$ 24,524,793	\$ 101,278,311
CONTINGENCY ON ENTIRE PROJECT	\$ 6,847,868	\$ 8,502,836	\$ 4,904,959	\$ 20,255,662
TOTAL:	\$ 41,087,206	\$ 51,017,015	\$ 29,429,752	\$ 121,533,973

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12. Farragut 345kV Substation Expansion										
1. MARINE CONSTRUCTON CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	68,400.00	45,600.00	\$ -	\$ 68,400	\$ 45,600	\$ 114,000
1.3	Sheet Pile Wall	840	FT	3,778.81	6,046.09	5,290.33	\$ 3,174,199	\$ 5,078,718	\$ 4,443,878	\$ 12,696,795
1.4	Dewater	1	LS		225,000.00	150,000.00	\$ -	\$ 225,000	\$ 150,000	\$ 375,000
1.5	Excavate and Remove existing organic material	8,077	CY		300.00	200.00	\$ -	\$ 2,423,111	\$ 1,615,407	\$ 4,038,519
1.6	Backfill (import, compacted in place)	65,424	CY	77.50	46.50	31.00	\$ 5,070,360	\$ 3,042,216	\$ 2,028,144	\$ 10,140,720
1.7	18" concrete pile	1,392	EA	3,367.00	3,030.30	2,020.20	\$ 4,686,864	\$ 4,218,178	\$ 2,812,118	\$ 11,717,160
1.8	Concrete Slab (Pier)	4,846	CY	480.00	448.00	672.00	\$ 2,326,187	\$ 2,171,108	\$ 3,256,661	\$ 7,753,956
1.9	3.5' Sea wall	610	FT	175.50	163.80	245.70	\$ 107,055	\$ 99,918	\$ 149,877	\$ 356,850
1.10	Continuous concrete on bulkhead	0	FT	234.00	218.40	327.60	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.11	Outter fender system	0	LF	80.00	48.00	72.00	\$ -	\$ -	\$ -	\$ -
1.12										
1.13										
TOTAL - Marine Construction Civil							\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	\$ -	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	221	CY	703.89	804.44	502.78	\$ 155,559	\$ 177,781	\$ 111,113	\$ 444,453
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	554	CY	703.89	804.44	502.78	\$ 389,854	\$ 445,547	\$ 278,467	\$ 1,113,868
2.32	Precast Firewall for transformer, PARs, reactors	3,990	SF	25.00	15.00	10.00	\$ 99,750	\$ 59,850	\$ 39,900	\$ 199,500
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 645,162	\$ 683,178	\$ 429,480	\$ 1,757,821
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch-3 Ph	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28		\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50		\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		292,900.00	191,600.00	\$ -	\$ 292,900	\$ 191,600	\$ 484,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker	0	EA		57,239.00	24,531.00		\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA					\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA					\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00		\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00		\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50		\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75		\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,759,517	\$ 3,374,420	\$ 2,244,480	\$ 13,378,417
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	575	LF	266.50	53.04	13.26	\$ 153,238	\$ 30,498	\$ 7,625	\$ 191,360
6.7										
6.8	138kV UG- Conduit	0	LF	41.00	30.00	16.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	9,360.00	11,700.00		\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	52.00	47.00	29.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,000	LF	2.09	3.42	1.46	\$ 10,455	\$ 17,077	\$ 7,319	\$ 34,850
7.2	Caweld, DSA, 4/0 , T, CROSS	143	EA	165.00	75.00		\$ 23,595	\$ 10,725	\$ -	\$ 34,320
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	1,577,942.61	1,104,559.83	473,382.78	\$ 1,577,943	\$ 1,104,560	\$ 473,383	\$ 3,155,885
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	41,575.50	33,260.40	8,315.10	\$ 124,727	\$ 99,781	\$ 24,945	\$ 249,453
8.4	Backup Line Relays (87L): GE L90	3	EA	41,575.50	33,260.40	8,315.10	\$ 124,727	\$ 99,781	\$ 24,945	\$ 249,453
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.18	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,516,145	\$ 1,907,422	\$ 727,723	\$ 5,151,291
12. Farragut 345kV Substation Expansion							\$ 26,618,500	\$ 23,414,051	\$ 17,942,946	\$ 67,975,498
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,447,494.90	620,354.96	\$ -	\$ 1,447,495	\$ 620,355	\$ 2,067,850
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		577,154.98		\$ -	\$ 577,155	\$ -	\$ 577,155
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,308,619.90		\$ -	\$ 2,308,620	\$ -	\$ 2,308,620
9.4	Utility PM and Project Oversight	1	LS		577,154.98		\$ -	\$ 577,155	\$ -	\$ 577,155
9.5	Site Accommodation, Facilities, Storage	1	LS	577,154.98			\$ 577,155	\$ -	\$ -	\$ 577,155
	Engineering									
9.6	Design Engineering	1.00	LS		4,617,239.80		\$ -	\$ 4,617,240	\$ -	\$ 4,617,240
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		404,008.48		\$ -	\$ 404,008	\$ -	\$ 404,008
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,164,331.16		\$ -	\$ 2,164,331	\$ -	\$ 2,164,331
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		577,154.98		\$ -	\$ 577,155	\$ -	\$ 577,155
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		173,146.49		\$ -	\$ 173,146	\$ -	\$ 173,146
9.15	Laydown Lease	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,420,000	\$ -	\$ -	\$ 2,420,000	\$ 2,420,000
9.20	Sales Tax on Materials	8.80%	LS	26,618,500.43			\$ 2,342,428	\$ -	\$ -	\$ 2,342,428
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		67,975.50		\$ -	\$ 67,975	\$ -	\$ 67,975
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,919,583	\$ 12,927,931	\$ 3,049,455	\$ 18,896,969

NEXtera Energy- TO38 Core 3

13 - Northport 345/138kV AIS & 138KV GIS Substation

Total: \$ 98,823,883

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
13 - Northport 345/138kV AIS & 138KV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,397,996	\$ 1,110,321	\$ 635,009	\$ 3,143,325
2. SUBSTATION FOUNDATIONS	\$ 1,906,076	\$ 1,924,785	\$ 1,173,176	\$ 5,004,037
3. SUBSTATION STRUCTURES	\$ 190,975	\$ 109,615	\$ 73,077	\$ 373,667
4. MAJOR EQUIPTMENT	\$ 23,681,938	\$ 6,693,277	\$ 4,293,523	\$ 34,668,738
5. LOW VOLTAGE & CONTROL CABLE	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH	\$ 3,507,324	\$ 1,775,983	\$ 885,857	\$ 6,169,163
7. GROUND GRID	\$ 267,816	\$ 193,605	\$ 45,270	\$ 506,690
8. CONTROL ENCLOSURE	\$ 2,808,956	\$ 2,333,642	\$ 931,722	\$ 6,074,320
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,399,464	\$ 8,853,148	\$ 2,893,532	\$ 15,146,144
Turnkey cost (HVDC, GIS)	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
Non-Turnkey cost	\$ 30,117,917	\$ 18,728,466	\$ 8,071,783	\$ 56,918,166
SUBTOTAL (Costs):	\$ 37,282,917	\$ 23,027,466	\$ 10,937,783	\$ 71,248,166
CONTRACTOR MARK-UP (OH&P)	\$ 5,851,125	\$ 3,629,064	\$ 1,624,881	\$ 11,105,070
SUBTOTAL:	\$ 43,134,042	\$ 26,656,529	\$ 12,562,664	\$ 82,353,236
CONTINGENCY ON ENTIRE PROJECT	\$ 8,626,808	\$ 5,331,306	\$ 2,512,533	\$ 16,470,647
TOTAL:	\$ 51,760,850	\$ 31,987,835	\$ 15,075,197	\$ 98,823,883

Description of Work: Construct a new Northport 138kV GIS substation adjecent to the existing Northport 138kV substation. Tie the existing Pilgrim-Northport 138kV lines, the new 345/138kV transformers, and the existing Northport 138kV substation into the 138kV breaker-and-a-half bus configuration.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 - Northport 345/138kV AIS & 138KV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 84,000	\$ 56,000	\$ 140,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,489	SY	4.85	7.20	4.80	\$ 21,771	\$ 32,320	\$ 21,547	\$ 75,638
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$ -	\$ 158,107	\$ 67,760	\$ 225,867
1.5	Site Grading- Excavation for Substation Pad	19,360	CY		9.00	6.00	\$ -	\$ 174,240	\$ 116,160	\$ 290,400
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	10,454	CY		21.00	9.00	\$ -	\$ 219,542.40	\$ 94,089.60	\$ 313,632.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	15,682	CY		2.40	1.60	\$ -	\$ 37,636	\$ 25,091	\$ 62,726
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	10,454	CY	25.00	2.40	1.60	\$ 261,360	\$ 25,091	\$ 16,727	\$ 303,178
1.9	Install substation 8" pad base	9,680	SY	11.00	6.00	4.00	\$ 106,480	\$ 58,080	\$ 38,720	\$ 203,280
1.10	Site Surfacing - Aggregate 6" Thick	14,520	SY	16.50	4.50	3.00	\$ 239,580	\$ 65,340	\$ 43,560	\$ 348,480
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,992	LF	13.85	13.85	6.92	\$ 27,585	\$ 27,585	\$ 13,793	\$ 68,963
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	670,464.00	172,800.00	114,156.00	\$ 670,464	\$ 172,800	\$ 114,156	\$ 957,420
1.15	Seeding	16,800	SF	1.50	1.50	1.00	\$ 25,200	\$ 25,200	\$ 16,800	\$ 67,200
1.16	Erosion Control-Silt fence install & remove	3,287	LF	2.41	3.16	0.72	\$ 7,921	\$ 10,386	\$ 2,366	\$ 20,674
1.17	Temporary fencing	2,191	LF	7.50	5.25	2.25	\$ 16,434	\$ 11,504	\$ 4,930	\$ 32,868
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,397,996	\$ 1,110,321	\$ 635,009	\$ 3,143,325
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.12	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.15	345/138KV, Single-Phase 560MVA Power Transformer with oil containmenet	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.16	345kV, Shunt Reactor with oil containment-350MVAR	450	CY	703.89	804.44	502.78	\$ 316,748	\$ 361,998	\$ 226,249	\$ 904,995
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	262	CY	703.89	804.44	502.78	\$ 184,418	\$ 210,763	\$ 131,727	\$ 526,908
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, GIS Enclosure-BLDG	490	CY	703.89	804.44	502.78	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
2.25	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.30	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.31	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.32	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 1,906,076	\$ 1,924,785	\$ 1,173,176	\$ 5,004,037
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.11	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.12	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.15	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	2	EA							
3.19	138kV, Cable sealing end	2	EA	4,066.40	1,443.00	962.00	\$ 8,133	\$ 2,886	\$ 1,924	\$ 12,943
3.20	138kV, Surge arrester	6	EA	4,066.40	1,443.00	962.00	\$ 24,398	\$ 8,658	\$ 5,772	\$ 38,828
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 190,975	\$ 109,615	\$ 73,077	\$ 373,667

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.7	345/138KV, Single-Phase 560MVA Power Transformer with oil containmenet	2	EA	5,220,000.00	3,520.00	880.00	\$ 10,440,000	\$ 7,040	\$ 1,760	\$ 10,448,800
4.8	Transport & Testing- Transformer	2	EA		771,400.00	510,600.00	\$ -	\$ 1,542,800	\$ 1,021,200	\$ 2,564,000
4.9	345kV, Shunt Reactor with oil containment-350MVAR	1	EA	4,310,025.00	3,520.00	880.00	\$ 4,310,025	\$ 3,520	\$ 880	\$ 4,314,425
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		374,020.00	247,880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		339,150.00	145,350.00	\$ -	\$ 339,150	\$ 145,350	\$ 484,500
4.12	345kV, Phase Angle Regulator	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	3	EA	6,669.00	5,460.00	2,340.00	\$ 20,007	\$ 16,380	\$ 7,020	\$ 43,407
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600
4.19	138Kv, GIS indoor	15	EA	477,666.67	286,600.00	191,066.67	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
4.20	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.24	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 23,681,938	\$ 6,693,277	\$ 4,293,523	\$ 34,668,738
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	23,100	LF	5.30	1.43	0.29	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,650	LF	11.15	10.80	5.40	\$ 51,848	\$ 50,220	\$ 25,110	\$ 127,178
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,113	LF	266.50	53.04	13.26	\$ 296,481	\$ 59,007	\$ 14,752	\$ 370,240
6.8	138kV UG- Conduit	2,449	LF	266.73	202.15	100.00	\$ 653,224	\$ 495,057	\$ 244,912	\$ 1,393,193
6.9	138kV UG- Cable	7,714	LF	145.00	87.00	58.00	\$ 1,118,581	\$ 671,148	\$ 447,432	\$ 2,237,162
6.10	138kV UG- Termination	48	EA	27,805.00	9,846.48	2,813.28	\$ 1,334,640	\$ 472,631	\$ 135,037	\$ 1,942,308
6.13	Fiber Optic Cable	2,571	LF	7.40	3.33	2.22	\$ 19,021	\$ 8,564	\$ 5,710	\$ 33,295
6.14	Ground Continuity Conductor	2,571	LF	13.04	7.53	5.02	\$ 33,529	\$ 19,355	\$ 12,904	\$ 65,788
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,507,324	\$ 1,775,983	\$ 885,857	\$ 6,169,163
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	27,485	LF	2.09	3.42	1.46	\$ 57,471	\$ 93,870	\$ 40,230	\$ 191,570
7.2	Caweld, DSA, 4/0 , T, CROSS	725	EA	165.00	75.00		\$ 119,625	\$ 54,375	\$ -	\$ 174,000
7.3	Ground Rod, 3/4" x 15'	672	EA	135.00	67.50	7.50	\$ 90,720	\$ 45,360	\$ 5,040	\$ 141,120
TOTAL - GROUND GRID							\$ 267,816	\$ 193,605	\$ 45,270	\$ 506,690
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	1	EA	384,814.39	346,332.95	230,888.63	\$ 384,814	\$ 346,333	\$ 230,889	\$ 962,036
8.2	345kV, GIS Enclosure-BLDG	1	EA	878,048.71	614,634.10	263,414.61	\$ 878,049	\$ 614,634	\$ 263,415	\$ 1,756,097
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.15	Backup Line Relays (87L): GE L90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.16	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.17	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.18	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.19	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.20	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.21	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.22	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.23	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.24	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.25	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.26	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.27	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.28	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.29	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.30	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,808,956	\$ 2,333,642	\$ 931,722	\$ 6,074,320
13 - Northport 345/138kV AIS & 138KV GIS Substation							\$ 33,883,453	\$ 14,174,317	\$ 8,044,251	\$ 56,102,022
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		526,874.91	225,803.53	\$ -	\$ 526,875	\$ 225,804	\$ 752,678
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		417,720.22		\$ -	\$ 417,720	\$ -	\$ 417,720
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,670,880.87		\$ -	\$ 1,670,881	\$ -	\$ 1,670,881
9.4	Utility PM and Project Oversight	1	LS		417,720.22		\$ -	\$ 417,720	\$ -	\$ 417,720
9.5	Site Accommodation, Facilities, Storage	1	LS	417,720.22			\$ 417,720	\$ -	\$ -	\$ 417,720
	Engineering									
9.6	Design Engineering	1.00	LS		3,341,761.74		\$ -	\$ 3,341,762	\$ -	\$ 3,341,762
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		292,404.15		\$ -	\$ 292,404	\$ -	\$ 292,404
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,566,450.81		\$ -	\$ 1,566,451	\$ -	\$ 1,566,451
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		417,720.22		\$ -	\$ 417,720	\$ -	\$ 417,720
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		125,316.07		\$ -	\$ 125,316	\$ -	\$ 125,316
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	678,280.00	\$ -	\$ -	\$ 678,280	\$ 678,280
9.17	Legal Fees (Real estate)	1.00	LS		-	20,348.40	\$ -	\$ -	\$ 20,348	\$ 20,348
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,960,000	\$ -	\$ -	\$ 1,960,000	\$ 1,960,000
9.20	Sales Tax on Materials	8.80%	LS	33,883,452.91			\$ 2,981,744	\$ -	\$ -	\$ 2,981,744
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		56,102.02		\$ -	\$ 56,102	\$ -	\$ 56,102
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,399,464	\$ 8,853,148	\$ 2,893,532	\$ 15,146,144

NEXtera Energy- TO38 Core 3

14.Pilgrim 138kV Substation Upgrades

Total: \$ 2,036,018

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
14.Pilgrim 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
2. SUBSTATION FOUNDATIONS	\$ 34,758	\$ 39,723	\$ 24,827	\$ 99,308
3. SUBSTATION STRUCTURES	\$ 45,630	\$ 59,338	\$ 37,176	\$ 142,144
4. MAJOR EQUIPTMENT	\$ 234,399	\$ 58,019	\$ 25,896	\$ 318,314
5. LOW VOLTAGE & CONTROL CABLE	\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
6. CONDUIT & CABLE TRENCH	\$ 76,660	\$ 22,980	\$ 8,175	\$ 107,815
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,002	\$ 233,261	\$ 51,117	\$ 347,380
SUBTOTAL (Costs):	\$ 655,016	\$ 583,463	\$ 199,387	\$ 1,437,866
CONTRACTOR MARK-UP (OH&P)	\$ 117,903	\$ 105,023	\$ 35,890	\$ 258,816
SUBTOTAL:	\$ 772,919	\$ 688,486	\$ 235,277	\$ 1,696,682
CONTINGENCY ON ENTIRE PROJECT	\$ 154,584	\$ 137,697	\$ 47,055	\$ 339,336
TOTAL:	\$ 927,503	\$ 826,183	\$ 282,333	\$ 2,036,018

Description of Work: Add 1 terminal to Pilgrim 138kV substation to accommodate the new transmission line										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS		24,000.00	16,000.00	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting	0	EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 24,000	\$ 16,000	\$ 40,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	6	CY	703.89	804.44	502.78	\$ 4,266	\$ 4,875	\$ 3,047	\$ 12,187
2.28	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 34,758	\$ 39,723	\$ 24,827	\$ 99,308
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.18	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	150	LF	25.00	184.94	123.29	\$ 3,750	\$ 27,741	\$ 18,494	\$ 49,985
3.22	AL. Bus fittings	1	LS	4,500.00	4,500.00	2,250.00	\$ 4,500	\$ 4,500	\$ 2,250	\$ 11,250
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,630	\$ 59,338	\$ 37,176	\$ 142,144
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA				\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 234,399	\$ 58,019	\$ 25,896	\$ 318,314
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	5,100	LF	5.30	1.43	0.29	\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	900	LF	11.15	10.80	5.40	\$ 10,035	\$ 9,720	\$ 4,860	\$ 24,615
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 76,660	\$ 22,980	\$ 8,175	\$ 107,815
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
10.Shore Road 138kV Substation Upgrades							\$ 592,014	\$ 350,201	\$ 148,270	\$ 1,090,486
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,446.51	7,477.08	\$ -	\$ 17,447	\$ 7,477	\$ 24,924
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,619.43		\$ -	\$ 43,619	\$ -	\$ 43,619
9.4	Utility PM and Project Oversight	1	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.5	Site Accommodation, Facilities, Storage	1	LS	10,904.86			\$ 10,905	\$ -	\$ -	\$ 10,905
	Engineering									
9.6	Design Engineering	1.00	LS		87,238.86		\$ -	\$ 87,239	\$ -	\$ 87,239
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		7,633.40		\$ -	\$ 1,527	\$ -	\$ 1,527
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,893.21		\$ -	\$ 40,893	\$ -	\$ 40,893
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,271.46		\$ -	\$ 3,271	\$ -	\$ 3,271
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	592,014.04			\$ 52,097	\$ -	\$ -	\$ 52,097
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,090.49		\$ -	\$ 1,090	\$ -	\$ 1,090
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,002	\$ 233,261	\$ 51,117	\$ 347,380

NEXTera Energy- TO38 Core 3

15. Exisitng Ruland Road 138 kV Substation Upgrades

Total: \$ 2,030,035

NEXTera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
15. Exisitng Ruland Road 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at exisitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
15. Exisitng Ruland Road 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
=3*3	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
11	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings	0	LS	58,500.00	58,500.00	29,250.00	\$ -	\$ -	\$ -	\$ -
3.24	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	Fiber Optic Cable	0	LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.12	Ground Continuity Conductor	0	LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	0	EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Primary Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.21	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE		0					\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
15. Exisitng Ruland Road 138 kV Substation Upgrades							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXTera Energy- TO38 Core 3

16. Existing East Garden City 138 kV Substation Upgrades

Total: \$ 28,298,464

NEXTera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
16. Existing East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPTMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16. Existing East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.22	AL. Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		457,900.00	301,600.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.22	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.23	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.24	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.25	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
16. Existing East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversight	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
	Engineering									
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

NEXtera Energy- TO38 Core 3

Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit

(Northport To Dunwoodie 345 kV)

Total: \$ 188,625,656

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	\$ 898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 7	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR /GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

NEXtera Energy- TO38 Core 3
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits
(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)

Total: \$ 346,473,248

NEXTera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632
SUBTOTAL (Costs):	\$ 92,520,355	\$ 99,703,098	\$ 52,461,045	\$ 244,684,497
CONTRACTOR MARK-UP (OH&P)	\$ 16,653,664	\$ 17,946,558	\$ 9,442,988	\$ 44,043,210
SUBTOTAL:	\$ 109,174,018	\$ 117,649,655	\$ 61,904,033	\$ 288,727,707
CONTINGENCY ON ENTIRE PROJECT	\$ 21,834,804	\$ 23,529,931	\$ 12,380,807	\$ 57,745,541
TOTAL:	\$ 131,008,822	\$ 141,179,587	\$ 74,284,840	\$ 346,473,248

Description of Work: Dunwoodie - New Rochelle Landing (double circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	520	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 832,000	\$ 2,496,000	\$ 832,000	\$ 4,160,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	20,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,496,000	\$ 561,600	\$ 3,057,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-SP -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	8.47	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	357,773	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 715,546	\$ 536,659	\$ 178,886	\$ 1,431,091
2.3	Trench Excavation	33,790	CY		\$ 17.5	\$ 7.5	\$ -	\$ 591,319	\$ 253,422	\$ 844,741
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,520	CY	\$ 50	\$ 25	\$ 14	\$ 175,988	\$ 86,234	\$ 49,277	\$ 311,498
2.5	Supply & Install Thermal Backfill -conduit level	29,566	CY	\$ 350	\$ 245	\$ 105	\$ 10,348,081	\$ 7,243,657	\$ 3,104,424	\$ 20,696,163
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,774	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,754,851	\$ 1,721,782	\$ 688,713	\$ 5,165,345
2.8	Conduit 8" SCH 40PVC	357,773	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 10,232,302	\$ 2,028,572	\$ 869,388	\$ 13,130,262
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	178,886	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 629,680	\$ 563,492	\$ 241,497	\$ 1,434,669
2.11	Warning Tape	44,722	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,708	\$ 11,180	\$ 4,472	\$ 22,361
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	5,984	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,720	\$ 44,880	\$ 149,600
2.14	Splice Vault Supply & Installation	\$ 60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000
2.15	Splice Vault Backfill	1,795	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,133	\$ 10,771	\$ 35,904

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	536,659	LF			\$ 0.25	\$ -	\$ -	\$ 134,165	\$ 134,165
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	28,581	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 400,133	\$ 400,133	\$ 200,067	\$ 1,000,333
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,939	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 177,678	\$ 186,562	\$ 79,955	\$ 444,195
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	138	EA		\$ 400	\$ 1,200	\$ -	\$ 55,097	\$ 165,291	\$ 220,388
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	138	EA		\$ 10	\$ 15	\$ -	\$ 1,377	\$ 2,066	\$ 3,444
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	296	EA		\$ 400	\$ 1,200	\$ -	\$ 118,264	\$ 354,791	\$ 473,055
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 462,462	\$ 308,308	\$ -	\$ 462,462	\$ 308,308	\$ 770,770
2.24	Excess Materials Disposal to Certified Backfill	49,372	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,209,614	\$ 518,406	\$ 1,728,020
2.25	Rock Excavation and Removal	26,516	CY		\$ 243	\$ 162	\$ -	\$ 6,443,332	\$ 4,295,555	\$ 10,738,886
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,774	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,774	\$ 19,887	\$ 59,660
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	93,915	FT	\$ 7	\$ 3	\$ 2	\$ 694,692	\$ 312,794	\$ 208,530	\$ 1,216,016
3.12	Ground Continuity Conductor	93,915	FT	\$ 13	\$ 8	\$ 5	\$ 1,224,562	\$ 706,901	\$ 471,267	\$ 2,402,731
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345							\$ 83,180,792	\$ 70,079,524	\$ 42,050,550	\$ 195,310,866
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,363,902	\$ 2,242,601	\$ -	\$ 3,363,902	\$ 2,242,601	\$ 5,606,504
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		7,812,434.62		\$ -	\$ 7,812,435	\$ -	\$ 7,812,435
4.4	Utility PM and Project Oversight	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.5	Site Accommodation, Facilities, Storage	1	LS	1,953,108.66			\$ 1,953,109	\$ -	\$ -	\$ 1,953,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,765,543	\$ -	\$ -	\$ 9,765,543	\$ -	\$ 9,765,543
4.7	LiDAR /GPR	1.0	LS		\$ 351,560	\$ 234,373	\$ -	\$ 351,560	\$ 234,373	\$ 585,933
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 820,306	\$ 546,870	\$ -	\$ 820,306	\$ 546,870	\$ 1,367,176
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,953,109		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 585,933		\$ -	\$ 585,933	\$ -	\$ 585,933
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 247,533	\$ -	\$ -	\$ 247,533	\$ 247,533
4.16	Legal Fees (Real estate)	1.00	LS		-	7,425.99	\$ -	\$ -	\$ 7,426	\$ 7,426
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 6,920,000	\$ -	\$ -	\$ 6,920,000	\$ 6,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 83,180,791.58			\$ 7,386,454	\$ -	\$ -	\$ 7,386,454
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 195,311	\$ -	\$ -	\$ 195,311	\$ 195,311
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632

NEXtera Energy- TO38 Core 3

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each)

EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV

Total: \$ 524,998,762

NEXtera Energy 0- T038 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 116,979,561	\$ 104,729,644	\$ 71,163,184	\$ 292,872,389
2. TRANSITION STATION	\$ 920,987	\$ 1,160,115	\$ 1,105,523	\$ 3,186,625
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 13,335,838	\$ 46,001,031	\$ 15,365,954	\$ 74,702,824
SUBTOTAL (Costs):	\$ 131,236,386	\$ 151,890,790	\$ 87,634,662	\$ 370,761,837
CONTRACTOR MARK-UP (OH&P)	\$ 23,622,549	\$ 27,340,342	\$ 15,774,239	\$ 66,737,131
SUBTOTAL:	\$ 154,858,935	\$ 179,231,132	\$ 103,408,901	\$ 437,498,968
CONTINGENCY ON ENTIRE PROJECT	\$ 30,971,787	\$ 35,846,226	\$ 20,681,780	\$ 87,499,794
TOTAL:	\$ 185,830,722	\$ 215,077,358	\$ 124,090,681	\$ 524,998,762

Description of Work: New Rochelle landing - Hempstead Harbor Landing. Part of any Dunwoodie to Shore/Ruland/EGC 345 kV project segment (Include HDD's to get onshore at both ends of route) 1600 mm2 Tri-Core										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	200,260	FT	\$ 537	\$ 400	\$ 250	\$ 107,539,534	\$ 80,103,936	\$ 50,064,960	\$ 237,708,430
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 10,135,879	\$ 6,757,252	\$ -	\$ 10,135,879	\$ 6,757,252	\$ 16,893,131
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.5	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	100,130	FT	\$ 7			\$ 740,661	\$ -	\$ -	\$ 740,661
1.8	Ground Continuity Conductor	100,130	FT	\$ 13			\$ 1,305,594	\$ -	\$ -	\$ 1,305,594
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	4,342	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,947,200	\$ 13,894,400	\$ 13,894,400	\$ 34,736,000
TOTAL - Submarine cable:							\$ 116,979,561	\$ 104,729,644	\$ 71,163,184	\$ 292,872,389
2. TRANSITION STATION										
2.1	Site Clearing	1.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 10,800	\$ 7,200	\$ 18,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	1,613	CY		24.50	10.50	\$ -	\$ 39,527	\$ 16,940	\$ 56,467
2.4	Site Grading- Excavation for Substation Pad	4,840	CY		9.00	6.00	\$ -	\$ 43,560	\$ 29,040	\$ 72,600
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,614	CY		21.00	9.00	\$ -	\$ 54,885.60	\$ 23,522.40	\$ 78,408.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,920	CY		2.40	1.60	\$ -	\$ 9,409	\$ 6,273	\$ 15,682
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	2,614	CY	25.00	2.40	1.60	\$ 65,340	\$ 6,273	\$ 4,182	\$ 75,794
2.8	Install substation 8" pad base	4,840	SY	11.00	6.00	4.00	\$ 53,240	\$ 29,040	\$ 19,360	\$ 101,640
2.9	Site Surfacing - Aggregate 6" Thick	4,840	SY	16.50	4.50	3.00	\$ 79,860	\$ 21,780	\$ 14,520	\$ 116,160
2.10	7' Station Fence w/ Barbed Wire & Grounding	900	LF	13.85	13.85	6.92	\$ 12,463	\$ 12,463	\$ 6,232	\$ 31,158
2.11	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
2.12	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
2.13	Erosion Control-Silt fence install & remove	1,500	LF	2.41	3.16	0.72	\$ 3,615	\$ 4,740	\$ 1,080	\$ 9,435
2.14	Temporary fencing	1,000	LF	7.50	5.25	2.25	\$ 7,500	\$ 5,250	\$ 2,250	\$ 15,000
2.15	345kV, Cable sealing end - 3 Ph	\$ 64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.16	345kV, lighting arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.17	345kV, Cable sealing end - 3 Ph	12	EA	8,346.00	5,758.74	3,839.16	\$ 100,152	\$ 69,105	\$ 46,070	\$ 215,327
2.18	345kV, lighting arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
2.19	AL. Bus Tubing, 5" SCH 80	420	LF	25.00	184.94	123.29	\$ 10,500	\$ 77,674	\$ 51,783	\$ 139,957
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	267	LF	2.09	-	-	\$ 558	\$ -	\$ -	\$ 558

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Caweld, DSA, 4/0 , T, CROSS	133	EA	165.00	75.00		\$ 22,000	\$ 10,000	\$ -	\$ 32,000
2.23	Ground Rod, 3/4" x 15'	36	EA	135.00	67.50	7.50	\$ 4,860	\$ 2,430	\$ 270	\$ 7,560
2.24	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.25	Splice Vault Excavation	5,177	CY		\$ 17.5	\$ 7.5	\$ -	\$ 90,596	\$ 38,827	\$ 129,422
2.26	Splice Vault Supply & Installation	8	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 364,000	\$ 171,600	\$ 400,400	\$ 936,000
2.27	Splice Vault Backfill	1,553	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,743	\$ 9,318	\$ 31,061
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	4,711	CY		\$ 24.5	\$ 10.5	\$ -	\$ 115,419	\$ 49,465	\$ 164,884
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	5,177	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,177	\$ 2,588	\$ 7,765
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 920,987	\$ 1,160,115	\$ 1,105,523	\$ 3,186,625
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 117,900,548	\$ 105,889,759	\$ 72,268,707	\$ 296,059,014
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		11,842,360.55		\$ -	\$ 11,842,361	\$ -	\$ 11,842,361
3.4	Utility PM and Project Oversight	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.5	Site Accommodation, Facilities, Storage	1	LS	2,960,590.14			\$ 2,960,590	\$ -	\$ -	\$ 2,960,590
	Engineering									
3.6	Design Engineering	1	LS		\$ 14,802,951		\$ -	\$ 14,802,951	\$ -	\$ 14,802,951
3.7	Surveying/Staking	1	LS		\$ 2,072,413		\$ -	\$ 2,072,413	\$ -	\$ 2,072,413
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,960,590		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.12	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.13	Warranties / LOC's	1	LS		\$ 888,177		\$ -	\$ 888,177	\$ -	\$ 888,177
3.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 842,480	\$ -	\$ -	\$ 842,480	\$ 842,480
3.16	Legal Fees (Real estate)	1.00	LS		-	25,274.40	\$ -	\$ -	\$ 25,274	\$ 25,274
3.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
3.19	Sales Tax on Materials	8.8%	LS	\$ 117,900,548			\$ 10,375,248	\$ -	\$ -	\$ 10,375,248
3.20	Contractor Permits	1	LS		\$ 296,059		\$ -	\$ 296,059	\$ -	\$ 296,059
3.21	Payment & Performance Bond	1	LS			\$ 10,480,000	\$ -	\$ -	\$ 10,480,000	\$ 10,480,000
3.22	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,335,838	\$ 46,001,031	\$ 15,365,954	\$ 74,702,824

NEXtera Energy- TO38 Core 3

Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit

EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV

Total: \$699,775,281

NEXtera Energy 0- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$165,374,873	\$140,494,560	\$91,110,953	\$396,980,386
2. TRANSITION STATION	\$416,351	\$564,240	\$435,307	\$1,415,898
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$18,573,591	\$59,107,213	\$18,114,495	\$95,795,299
SUBTOTAL (Costs):	\$184,364,814	\$200,166,013	\$109,660,755	\$494,191,582
CONTRACTOR MARK-UP (OH&P)	\$33,185,667	\$36,029,882	\$19,738,936	\$88,954,485
SUBTOTAL:	\$217,550,481	\$236,195,896	\$129,399,691	\$583,146,067
CONTINGENCY ON ENTIRE PROJECT	\$43,510,096	\$47,239,179	\$25,879,938	\$116,629,213
TOTAL:	\$261,060,577	\$283,435,075	\$155,279,629	\$699,775,281

Description of Work: Part of any Dunwoodie to Northport 345 kV project segment (Include HDD's to get onshore at both ends of route)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	295,046	FT	\$537	\$400	\$250	\$158,439,917	\$118,018,560	\$73,761,600	\$350,220,077
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$14,933,371	\$9,955,581	\$-	\$14,933,371	\$9,955,581	\$24,888,952
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$-	\$-	\$-	\$-
1.4	Cable Transition Splice	8	EA	\$27,911	\$37,214	\$27,911	\$223,286	\$297,715	\$223,286	\$744,286
1.5	Outdoor Termination	8	EA	\$27,911	\$37,214	\$27,911	\$223,286	\$297,715	\$223,286	\$744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$-	\$-	\$-	\$-
1.7	Fiber Optic Cable	147,523	FT	\$7			\$1,091,229	\$-	\$-	\$1,091,229
1.8	Ground Continuity Conductor	147,523	FT	\$13			\$1,923,555	\$-	\$-	\$1,923,555
1.9							\$-	\$-	\$-	\$-
1.10	Jack and Bore along Route	0	LF	\$1,600	\$3,200	\$3,200	\$-	\$-	\$-	\$-
1.11	HDD along Route	4,342	LF	\$800	\$1,600	\$1,600	\$3,473,600	\$6,947,200	\$6,947,200	\$17,368,000
TOTAL - Submarine cable:							\$165,374,873	\$140,494,560	\$91,110,953	\$396,980,386
2. TRANSITION STATION										
2.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$-	\$5,400	\$3,600	\$9,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$-	\$-	\$-	\$-
2.3	Strip and Dispose Top Soil	807	CY		24.50	10.50	\$-	\$19,763	\$8,470	\$28,233
2.4	Site Grading- Excavation for Substation Pad	2,420	CY		9.00	6.00	\$-	\$21,780	\$14,520	\$36,300
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,307	CY		21.00	9.00	\$-	\$27,442.80	\$11,761.20	\$39,204.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,960	CY		2.40	1.60	\$-	\$4,704	\$3,136	\$7,841
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	1,307	CY	25.00	2.40	1.60	\$32,670	\$3,136	\$2,091	\$37,897
2.8	Install substation 8" pad base	2,420	SY	11.00	6.00	4.00	\$26,620	\$14,520	\$9,680	\$50,820
2.9	Site Surfacing - Aggregate 6" Thick	2,420	SY	16.50	4.50	3.00	\$39,930	\$10,890	\$7,260	\$58,080
2.10	7' Station Fence w/ Barbed Wire & Grounding	450	LF	13.85	13.85	6.92	\$6,232	\$6,232	\$3,116	\$15,579
2.11	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$8,100	\$3,245	\$1,305	\$12,650
2.12	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$2,500	\$1,000	\$350	\$3,850
2.13	Erosion Control-Silt fence install & remove	750	LF	2.41	3.16	0.72	\$1,808	\$2,370	\$540	\$4,718
2.14	Temporary fencing	500	LF	7.50	5.25	2.25	\$3,750	\$2,625	\$1,125	\$7,500
2.15	345kV, Cable sealing end - 3 Ph	\$32	CY	703.89	804.44	502.78	\$22,595	\$25,823	\$16,139	\$64,556
2.16	345kV, lighting arrester	32	CY	703.89	804.44	502.78	\$22,595	\$25,823	\$16,139	\$64,556
2.17	345kV, Cable sealing end - 3 Ph	6	EA	8,346.00	5,758.74	3,839.16	\$50,076	\$34,552	\$23,035	\$107,663
2.18	345kV, lighting arrester	6	EA	4,810.00	2,886.00	1,924.00	\$28,860	\$17,316	\$11,544	\$57,720
2.19	AL. Bus Tubing, 5" SCH 80	630	LF	25.00	184.94	123.29	\$15,750	\$116,511	\$77,674	\$209,935
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$12,600	\$12,600	\$6,300	\$31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	-	-	\$836	\$-	\$-	\$836

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000
2.23	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,430	\$ 1,215	\$ 135	\$ 3,780
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	1,294	CY		\$ 17.5	\$ 7.5	\$ -	\$ 22,649	\$ 9,707	\$ 32,356
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	388	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,436	\$ 2,330	\$ 7,765
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	1,178	CY		\$ 24.5	\$ 10.5	\$ -	\$ 28,855	\$ 12,366	\$ 41,221
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	1,294	CF		\$ 1.0	\$ 0.5	\$ -	\$ 1,294	\$ 647	\$ 1,941
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 165,791,224	\$ 141,058,800	\$ 91,546,260	\$ 398,396,284
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,983,962.84		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		15,935,851.34		\$ -	\$ 15,935,851	\$ -	\$ 15,935,851
3.4	Utility PM and Project Oversight	1	LS		3,983,962.84		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.5	Site Accommodation, Facilities, Storage	1	LS	3,983,962.84			\$ 3,983,963	\$ -	\$ -	\$ 3,983,963
	Engineering									
3.6	Design Engineering	1	LS		\$ 19,919,814		\$ -	\$ 19,919,814	\$ -	\$ 19,919,814
3.7	Surveying/Staking	1	LS		\$ 2,788,774		\$ -	\$ 2,788,774	\$ -	\$ 2,788,774
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,983,963		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 1,195,189		\$ -	\$ 1,195,189	\$ -	\$ 1,195,189
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 112,908	\$ -	\$ -	\$ 112,908	\$ 112,908
3.15	Legal Fees (Real estate)	1.00	LS		-	3,387.24	\$ -	\$ -	\$ 3,387	\$ 3,387
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 165,791,224			\$ 14,589,628	\$ -	\$ -	\$ 14,589,628
3.21	Contractor Permits	1	LS		\$ 398,396		\$ -	\$ 398,396	\$ -	\$ 398,396
3.22	Payment & Performance Bond	1	LS			\$ 13,980,000	\$ -	\$ -	\$ 13,980,000	\$ 13,980,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 18,573,591	\$ 59,107,213	\$ 18,114,495	\$ 95,795,299

Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit
(EGC To Sprain Brook 345 kV)

Total: \$ 210,271,720

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,537,664	\$ 12,454,558	\$ 4,987,906	\$ 19,980,128
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618
SUBTOTAL (Costs):	\$ 55,280,235	\$ 62,197,429	\$ 31,019,314	\$ 148,496,978
CONTRACTOR MARK-UP (OH&P)	\$ 9,950,442	\$ 11,195,537	\$ 5,583,476	\$ 26,729,456
SUBTOTAL:	\$ 65,230,678	\$ 73,392,966	\$ 36,602,790	\$ 175,226,434
CONTINGENCY ON ENTIRE PROJECT	\$ 13,046,136	\$ 14,678,593	\$ 7,320,558	\$ 35,045,287
TOTAL:	\$ 78,276,813	\$ 88,071,559	\$ 43,923,348	\$ 210,271,720

Description of Work: East Garden City - Hempstead Harbor Landing (Shore Road, single circuits). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,147,000	\$ 3,063,000	\$ 10,210,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	53,909	LF	\$ 30	\$ 18	\$ 12	\$ 1,617,264	\$ 970,358	\$ 646,906	\$ 3,234,528
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	10.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 408,400	\$ 1,225,200	\$ 408,400	\$ 2,042,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,537,664	\$ 12,454,558	\$ 4,987,906	\$ 19,980,128
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.21	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,427,358	\$ 951,572	\$ 2,378,930
2.2	Formwork in Trench	351,053	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 702,106	\$ 526,579	\$ 175,526	\$ 1,404,211
2.3	Trench Excavation	29,254	CY		\$ 17.5	\$ 7.5	\$ -	\$ 511,952	\$ 219,408	\$ 731,360
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,828	SF	\$ 50	\$ 25	\$ 14	\$ 91,420	\$ 44,796	\$ 25,598	\$ 161,813
2.5	Supply & Install Thermal Backfill	15,359	CY	\$ 350	\$ 245	\$ 105	\$ 5,375,496	\$ 3,762,847	\$ 1,612,649	\$ 10,750,992
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,150	CY	\$ 200	\$ 125	\$ 50	\$ 1,430,053	\$ 893,783	\$ 357,513	\$ 2,681,349
2.9	Conduit 8" SCH 40PVC	215,635	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 6,167,167	\$ 1,222,652	\$ 523,994	\$ 7,913,812
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	107,818	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 379,518	\$ 339,625	\$ 145,554	\$ 864,697
2.12	Warning Tape	107,818	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 16,173	\$ 26,954	\$ 10,782	\$ 53,909
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	4,987	CY		\$ 17.5	\$ 7.5	\$ -	\$ 87,267	\$ 37,400	\$ 124,667

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Supply & Installation	\$ 30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	1,496	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,944	\$ 8,976	\$ 29,920
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	323,453	LF			\$ 0.25	\$ -	\$ -	\$ 80,863	\$ 80,863
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,093	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 239,299	\$ 239,299	\$ 119,650	\$ 598,248
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 106,260	\$ 111,573	\$ 47,817	\$ 265,651
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	72	EA		\$ 400	\$ 1,200	\$ -	\$ 28,601	\$ 85,803	\$ 114,404
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	72	EA		\$ 10	\$ 15	\$ -	\$ 715	\$ 1,073	\$ 1,788
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,434	\$ 184,303	\$ 245,737
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	42,569	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,042,930	\$ 446,970	\$ 1,489,901
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	34,241	CF		\$ 1.0	\$ 0.5	\$ -	\$ 34,241	\$ 17,121	\$ 51,362
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	56,604	FT	\$ 7	\$ 3	\$ 2	\$ 418,702	\$ 188,526	\$ 125,684	\$ 732,912
3.12	Ground Continuity Conductor	56,604	FT	\$ 13	\$ 8	\$ 5	\$ 738,063	\$ 426,060	\$ 284,040	\$ 1,448,163
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 49,688,907	\$ 43,412,704	\$ 24,793,749	\$ 117,895,360
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,046,194	\$ 1,364,129	\$ -	\$ 2,046,194	\$ 1,364,129	\$ 3,410,323
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.3	Construction Project Management / Supervision	1	LS		4,715,814.38		\$ -	\$ 4,715,814	\$ -	\$ 4,715,814
4.4	Utility PM and Project Oversight	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.5	Site Accommodation, Facilities, Storage	1	LS	1,178,953.60			\$ 1,178,954	\$ -	\$ -	\$ 1,178,954
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,894,768	\$ -	\$ -	\$ 5,894,768	\$ -	\$ 5,894,768
4.7	LiDAR /GPR	1.0	LS		\$ 212,212	\$ 141,474	\$ -	\$ 212,212	\$ 141,474	\$ 353,686
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 495,161	\$ 330,107	\$ -	\$ 495,161	\$ 330,107	\$ 825,268
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,178,954		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 353,686		\$ -	\$ 353,686	\$ -	\$ 353,686
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 50,426	\$ -	\$ -	\$ 50,426	\$ 50,426
4.16	Legal Fees (Real estate)	1.00	LS		-	1,512.78	\$ -	\$ -	\$ 1,513	\$ 1,513
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 4,200,000	\$ -	\$ -	\$ 4,200,000	\$ 4,200,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 49,688,906.93			\$ 4,412,375	\$ -	\$ -	\$ 4,412,375
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 117,895	\$ -	\$ -	\$ 117,895	\$ 117,895
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618

Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit
(Ruland To Sprain Brook 345 kV)

Total: \$ 349,868,481

NEXtera Energy- T038 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274
SUBTOTAL (Costs):	\$ 90,427,881	\$ 103,561,178	\$ 53,093,201	\$ 247,082,261
CONTRACTOR MARK-UP (OH&P)	\$ 16,277,019	\$ 18,641,012	\$ 9,556,776	\$ 44,474,807
SUBTOTAL:	\$ 106,704,900	\$ 122,202,190	\$ 62,649,977	\$ 291,557,067
CONTINGENCY ON ENTIRE PROJECT	\$ 21,340,980	\$ 24,440,438	\$ 12,529,995	\$ 58,311,413
TOTAL:	\$ 128,045,880	\$ 146,642,628	\$ 75,179,973	\$ 349,868,481

Description of Work: Ruland - Hempstead Harbor Landing (Shore Road, single circuit). 5000 kcmil copper XLPE, single cable per phase..										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	15.89	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 11,120,200	\$ 4,765,800	\$ 15,886,000
1.3	Flaggers	500	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 800,000	\$ 2,400,000	\$ 800,000	\$ 4,000,000
1.4	K Rail / Lane Control / Metal Plates	83,878	LF	\$ 30	\$ 18	\$ 12	\$ 2,516,342	\$ 1,509,805	\$ 1,006,537	\$ 5,032,685
1.5	Police Support	20,000.0	HR		\$ 120	\$ 27	\$ -	\$ 2,400,000	\$ 540,000	\$ 2,940,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	15.89	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 635,440	\$ 1,906,320	\$ 635,440	\$ 3,177,200
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	15.89	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,220,863	\$ 1,480,575	\$ 3,701,438
2.2	Formwork in Trench	643,225	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,286,449	\$ 964,837	\$ 321,612	\$ 2,572,899
2.3	Trench Excavation	53,602	CY		\$ 17.5	\$ 7.5	\$ -	\$ 938,036	\$ 402,015	\$ 1,340,051
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,350	SF	\$ 50	\$ 25	\$ 14	\$ 167,506	\$ 82,078	\$ 46,902	\$ 296,486
2.5	Supply & Install Thermal Backfill	28,141	CY	\$ 350	\$ 245	\$ 105	\$ 9,849,377	\$ 6,894,564	\$ 2,954,813	\$ 19,698,755
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,101	CY	\$ 200	\$ 125	\$ 50	\$ 2,620,247	\$ 1,637,654	\$ 655,062	\$ 4,912,963
2.9	Conduit 8" SCH 40PVC	335,512	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 9,595,652	\$ 1,902,355	\$ 815,295	\$ 12,313,302
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	167,756	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 590,502	\$ 528,432	\$ 226,471	\$ 1,345,404
2.12	Warning Tape	167,756	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 25,163	\$ 41,939	\$ 16,776	\$ 83,878
2.13	Trench Box Shoring (Vault)	49	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 885,876	\$ 1,328,814	\$ 2,214,689
2.14	Splice Vault Excavation	8,145	CY		\$ 17.5	\$ 7.5	\$ -	\$ 142,536	\$ 61,087	\$ 203,622
2.15	Splice Vault Supply & Installation	49	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,715,000	\$ 808,500	\$ 1,886,500	\$ 4,410,000
2.16	Splice Vault Backfill	\$ 2,443	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,209	\$ 14,661	\$ 48,869
2.17	Jack and Bore along Route	805	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 644,000	\$ 1,288,000	\$ 1,288,000	\$ 3,220,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	1,200	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 960,000	\$ 1,920,000	\$ 1,920,000	\$ 4,800,000
2.19	Air Test Ducts	503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LiDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 43,680	\$ 29,120	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXtera Energy- TO38 Core 3

Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits

Total: \$ 133,317,472

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576
SUBTOTAL (Costs):	\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757
CONTRACTOR MARK-UP (OH&P)	\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136
SUBTOTAL:	\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893
CONTINGENCY ON ENTIRE PROJECT	\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579
TOTAL:	\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472

Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	\$ -	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversight	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LiDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXtera Energy- TO38 Core 3

Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,216
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	\$ 3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	-	\$ 1,492	\$ 2,239	\$ 3,731
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL -ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LIDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

NEXtera Energy- TO38 Core 3

Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit

(Pilgram to Northport kV)

Total: \$ 165,653,108

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365
SUBTOTAL (Costs):	\$ 42,682,442	\$ 49,673,108	\$ 24,631,109	\$ 116,986,658
CONTRACTOR MARK-UP (OH&P)	\$ 7,682,840	\$ 8,941,159	\$ 4,433,600	\$ 21,057,599
SUBTOTAL:	\$ 50,365,281	\$ 58,614,267	\$ 29,064,708	\$ 138,044,257
CONTINGENCY ON ENTIRE PROJECT	\$ 10,073,056	\$ 11,722,853	\$ 5,812,942	\$ 27,608,851
TOTAL:	\$ 60,438,338	\$ 70,337,121	\$ 34,877,650	\$ 165,653,108

Description of Work: Ruland - 138kV (399/567/900 MVA) 5000 kcmil copper XLPE, single cable per phase (8.34 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.34	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,838,000	\$ 2,502,000	\$ 8,340,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,035	LF	\$ 30	\$ 18	\$ 12	\$ 1,321,056	\$ 792,634	\$ 528,422	\$ 2,642,112
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.34	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 333,600	\$ 1,000,800	\$ 333,600	\$ 1,668,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.34	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,165,932	\$ 777,288	\$ 1,943,220
2.2	Formwork in Trench	346,914	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 693,827	\$ 520,370	\$ 173,457	\$ 1,387,654
2.3	Trench Excavation	28,909	CY		\$ 17.5	\$ 7.5	\$ -	\$ 505,916	\$ 216,821	\$ 722,737
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,807	SF	\$ 50	\$ 25	\$ 14	\$ 90,342	\$ 44,268	\$ 25,296	\$ 159,905
2.5	Supply & Install Thermal Backfill	15,177	CY	\$ 350	\$ 245	\$ 105	\$ 5,312,115	\$ 3,718,480	\$ 1,593,634	\$ 10,624,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,066	CY	\$ 200	\$ 125	\$ 50	\$ 1,413,191	\$ 883,244	\$ 353,298	\$ 2,649,733
2.9	Conduit 8" SCH 40PVC	176,141	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 5,037,627	\$ 998,718	\$ 428,022	\$ 6,464,367
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	88,070	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 310,008	\$ 277,422	\$ 118,895	\$ 706,325
2.12	Warning Tape	88,070	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,211	\$ 22,018	\$ 8,807	\$ 44,035
2.13	Trench Box Shoring (Vault)	24	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 433,898	\$ 650,847	\$ 1,084,746
2.14	Splice Vault Excavation	3,285	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,493	\$ 24,640	\$ 82,133
2.15	Splice Vault Supply & Installation	24	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 840,000	\$ 396,000	\$ 924,000	\$ 2,160,000
2.16	Splice Vault Backfill	\$ 986	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,798	\$ 5,914	\$ 19,712

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	95	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 76,000	\$ 152,000	\$ 152,000	\$ 380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	264,211	LF			\$ 0.25	\$ -	\$ -	\$ 66,053	\$ 66,053
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,481	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 230,729	\$ 230,729	\$ 115,364	\$ 576,822
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,578	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 102,455	\$ 107,577	\$ 46,105	\$ 256,136
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,264	\$ 84,791	\$ 113,055
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	71	EA		\$ 10	\$ 15	\$ -	\$ 707	\$ 1,060	\$ 1,766
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,710	\$ 182,130	\$ 242,840
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	40,572	CY		\$ 24.5	\$ 10.5	\$ -	\$ 994,013	\$ 426,006	\$ 1,420,019
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	24	EA			\$ 4,000	\$ -	\$ -	\$ 96,000	\$ 96,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	32,195	CF		\$ 1.0	\$ 0.5	\$ -	\$ 32,195	\$ 16,097	\$ 48,292
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	138,711	FT	\$ 145	\$ 87	\$ 58	\$ 20,113,078	\$ 12,067,847	\$ 8,045,231	\$ 40,226,155
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	72	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 424,656	\$ 708,947	\$ 202,556	\$ 1,336,159
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	24	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 639,816	\$ 383,890	\$ 255,926	\$ 1,279,632
3.11	Fiber Optic Cable	46,237	FT	\$ 7	\$ 3	\$ 2	\$ 342,015	\$ 153,997	\$ 102,665	\$ 598,676
3.12	Ground Continuity Conductor	46,237	FT	\$ 13	\$ 8	\$ 5	\$ 602,884	\$ 348,026	\$ 232,017	\$ 1,182,926
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 38,346,592	\$ 35,001,236	\$ 19,719,466	\$ 93,067,293
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,641,621	\$ 1,094,414	\$ -	\$ 1,641,621	\$ 1,094,414	\$ 2,736,035
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.3	Construction Project Management / Supervision	1	LS		3,722,691.74		\$ -	\$ 3,722,692	\$ -	\$ 3,722,692
4.4	Utility PM and Project Oversight	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.5	Site Accommodation, Facilities, Storage	1	LS	930,672.93			\$ 930,673	\$ -	\$ -	\$ 930,673
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,653,365	\$ -	\$ -	\$ 4,653,365	\$ -	\$ 4,653,365
4.7	LiDAR /GPR	1.0	LS		\$ 167,521	\$ 111,681	\$ -	\$ 167,521	\$ 111,681	\$ 279,202
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 390,883	\$ 260,588	\$ -	\$ 390,883	\$ 260,588	\$ 651,471
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 930,673		\$ -	\$ 930,673	\$ -	\$ 930,673
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 279,202		\$ -	\$ 279,202	\$ -	\$ 279,202
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 34,478	\$ -	\$ -	\$ 34,478	\$ 34,478
4.16	Legal Fees (Real estate)	1.00	LS		-	1,034.34	\$ -	\$ -	\$ 1,034	\$ 1,034
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 3,300,000	\$ -	\$ -	\$ 3,300,000	\$ 3,300,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 38,346,591.60			\$ 3,405,177	\$ -	\$ -	\$ 3,405,177
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 93,067	\$ -	\$ -	\$ 93,067	\$ 93,067
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365

Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit
(EGC-Farragut 345kv)

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 249 - Jamaica To Farragut 345kv Onshore UG Cables -Single circuit(EGC-Farragut 345kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,686,464	\$ 13,140,838	\$ 5,290,426	\$ 21,117,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 18,736,904	\$ 14,861,575	\$ 9,340,154	\$ 42,938,633
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 34,016,741	\$ 20,570,670	\$ 13,308,667	\$ 67,896,078
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,242,606	\$ 20,847,264	\$ 7,115,514	\$ 34,205,384
SUBTOTAL (Costs):	\$ 61,682,715	\$ 69,420,347	\$ 35,054,761	\$ 166,157,823
CONTRACTOR MARK-UP (OH&P)	\$ 11,102,889	\$ 12,495,662	\$ 6,309,857	\$ 29,908,408
SUBTOTAL:	\$ 72,785,604	\$ 81,916,010	\$ 41,364,618	\$ 196,066,231
CONTINGENCY ON ENTIRE PROJECT	\$ 14,557,121	\$ 16,383,202	\$ 8,272,924	\$ 39,213,246
TOTAL:	\$ 87,342,724	\$ 98,299,212	\$ 49,637,541	\$ 235,279,477

Comp249 JA-Farragut 345kv UG

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	345	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 276,000	\$ 552,000	\$ 552,000	\$ 1,380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	347,213	LF			\$ 0.25	\$ -	\$ -	\$ 86,803	\$ 86,803
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,817	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 305,439	\$ 305,439	\$ 152,719	\$ 763,596
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,060	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 135,629	\$ 142,411	\$ 61,033	\$ 339,073
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	92	EA		\$ 400	\$ 1,200	\$ -	\$ 36,828	\$ 110,484	\$ 147,312
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	92	EA		\$ 10	\$ 15	\$ -	\$ 921	\$ 1,381	\$ 2,302
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	198	EA		\$ 400	\$ 1,200	\$ -	\$ 79,105	\$ 237,316	\$ 316,421
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	54,113	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,325,765	\$ 568,185	\$ 1,893,951
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	34	EA			\$ 4,000	\$ -	\$ -	\$ 136,000	\$ 136,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	43,321	CF		\$ 1.0	\$ 0.5	\$ -	\$ 43,321	\$ 21,660	\$ 64,981
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 18,736,904	\$ 14,861,575	\$ 9,340,154	\$ 42,938,633
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	182,287	FT	\$ 167	\$ 100	\$ 67	\$ 30,441,882	\$ 18,265,129	\$ 12,176,753	\$ 60,883,764
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	102	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,195,644	\$ 1,004,341	\$ 286,955	\$ 2,486,940
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	34	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 970,647	\$ 582,388	\$ 388,259	\$ 1,941,295
3.11	Fiber Optic Cable	60,762	FT	\$ 7	\$ 3	\$ 2	\$ 449,458	\$ 202,375	\$ 134,916	\$ 786,749
3.12	Ground Continuity Conductor	60,762	FT	\$ 13	\$ 8	\$ 5	\$ 792,279	\$ 457,357	\$ 304,905	\$ 1,554,541
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 34,016,741	\$ 20,570,670	\$ 13,308,667	\$ 67,896,078
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 55,440,109	\$ 48,573,083	\$ 27,939,247	\$ 131,952,439
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,295,370	\$ 1,530,247	\$ -	\$ 2,295,370	\$ 1,530,247	\$ 3,825,616
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,319,524.39		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.3	Construction Project Management / Supervision	1	LS		5,278,097.54		\$ -	\$ 5,278,098	\$ -	\$ 5,278,098
4.4	Utility PM and Project Oversight	1	LS		1,319,524.39		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.5	Site Accommodation, Facilities, Storage	1	LS	1,319,524.39			\$ 1,319,524	\$ -	\$ -	\$ 1,319,524
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,597,622	\$ -	\$ -	\$ 6,597,622	\$ -	\$ 6,597,622
4.7	LiDAR /GPR	1.0	LS		\$ 237,514	\$ 158,343	\$ -	\$ 237,514	\$ 158,343	\$ 395,857
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 554,200	\$ 369,467	\$ -	\$ 554,200	\$ 369,467	\$ 923,667
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,319,524		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 395,857		\$ -	\$ 395,857	\$ -	\$ 395,857
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 199,500	\$ -	\$ -	\$ 199,500	\$ 199,500
4.16	Legal Fees (Real estate)	1.00	LS		-	5,985.00	\$ -	\$ -	\$ 5,985	\$ 5,985
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 4,700,000	\$ -	\$ -	\$ 4,700,000	\$ 4,700,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 55,440,108.80			\$ 4,923,082	\$ -	\$ -	\$ 4,923,082
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 131,952	\$ -	\$ -	\$ 131,952	\$ 131,952
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,242,606	\$ 20,847,264	\$ 7,115,514	\$ 34,205,384

Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit
(EGC-Jamaica 138kv & EGC-Farragut 345kv)

Total: \$ 417,671,578

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit (EGC-Jamaica 138kv & EGC-Farragut 345kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,843,456	\$ 13,949,314	\$ 5,610,142	\$ 22,402,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 37,471,503	\$ 27,164,952	\$ 17,236,589	\$ 81,873,044
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 65,241,174	\$ 39,963,042	\$ 25,809,297	\$ 131,013,513
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,726,279	\$ 35,817,102	\$ 12,132,954	\$ 59,676,335
SUBTOTAL (Costs):	\$ 117,282,412	\$ 116,894,409	\$ 60,788,982	\$ 294,965,804
CONTRACTOR MARK-UP (OH&P)	\$ 21,110,834	\$ 21,040,994	\$ 10,942,017	\$ 53,093,845
SUBTOTAL:	\$ 138,393,246	\$ 137,935,403	\$ 71,730,999	\$ 348,059,648
CONTINGENCY ON ENTIRE PROJECT	\$ 27,678,649	\$ 27,587,081	\$ 14,346,200	\$ 69,611,930
TOTAL:	\$ 166,071,896	\$ 165,522,484	\$ 86,077,199	\$ 417,671,578

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 247 - Jamaica to East Garden City 138 and 345kv Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	340	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 544,000	\$ 1,632,000	\$ 544,000	\$ 2,720,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	13,600.0	HR		\$ 120	\$ 27	\$ -	\$ 1,632,000	\$ 367,200	\$ 1,999,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,843,456	\$ 13,949,314	\$ 5,610,142	\$ 22,402,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	12	Mile		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	466,058	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 932,115	\$ 699,086	\$ 233,029	\$ 1,864,230
Double Circuit Conduit Trench (EGC-JA 138KV & EGC-New Farragut 345kv)										
2.3	Trench Excavation	73,361	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,283,816	\$ 550,207	\$ 1,834,023
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,585	SF	\$ 50	\$ 25	\$ 14	\$ 229,253	\$ 112,334	\$ 64,191	\$ 405,778
2.5	Supply & Install Thermal Backfill	38,514	CY	\$ 350	\$ 245	\$ 105	\$ 13,480,069	\$ 9,436,048	\$ 4,044,021	\$ 26,960,138
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	17,943	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,588,644	\$ 2,242,902	\$ 897,161	\$ 6,728,707
2.9	Conduit 8" SCH 40PVC	489,562	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 14,001,462	\$ 2,775,814	\$ 1,189,635	\$ 17,966,911
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	244,781	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 861,628	\$ 771,060	\$ 330,454	\$ 1,963,142
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 30,598	\$ 12,239	\$ 61,195
Single Circuit Conduit Trench										
2.13	Trench Excavation	1,792	CY		\$ 17.5	\$ 7.5	\$ -	\$ 31,360	\$ 13,440	\$ 44,800

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.14	Supply & Install 6" Sand Bedding for direct bury conduits	\$ 112	SF	\$ 50	\$ 25	\$ 14	\$ 5,600	\$ 2,744	\$ 1,568	\$ 9,912
2.15	Supply & Install Thermal Backfill	896	CY	\$ 350	\$ 245	\$ 105	\$ 313,600	\$ 219,520	\$ 94,080	\$ 627,200
2.16	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.17	Native Backfill -direct bury conduits sys Trench	1,114	CY		\$ 14.0	\$ 6.0	\$ -	\$ 15,596	\$ 6,684	\$ 22,281
2.18	Supply & Install Ductbank Concrete	438	CY	\$ 200	\$ 125	\$ 50	\$ 87,599	\$ 54,749	\$ 21,900	\$ 164,248
2.19	Conduit 8" SCH 40PVC	10,752	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 307,507	\$ 60,964	\$ 26,127	\$ 394,598
2.20	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.21	Conduit 2" SCH 40PVC	5,376	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 18,924	\$ 16,934	\$ 7,258	\$ 43,116
2.22	Warning Tape	2,688	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 403	\$ 672	\$ 269	\$ 1,344
138 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	36	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 650,847	\$ 976,271	\$ 1,627,119
2.13	Splice Vault Excavation	4,928	CY		\$ 17.5	\$ 7.5	\$ -	\$ 86,240	\$ 36,960	\$ 123,200
2.14	Splice Vault Supply & Installation	36	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,260,000	\$ 594,000	\$ 1,386,000	\$ 3,240,000
2.15	Splice Vault Backfill	1,478	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,698	\$ 8,870	\$ 29,568
345 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.13	Splice Vault Excavation	5,818	CY		\$ 17.5	\$ 7.5	\$ -	\$ 101,811	\$ 43,633	\$ 145,444
2.14	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.15	Splice Vault Backfill	1,745	CY		\$ 14.0	\$ 6.0	\$ -	\$ 24,435	\$ 10,472	\$ 34,907
2.16	Jack and Bore along Route	250	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 400,000	\$ 800,000	\$ 800,000	\$ 2,000,000
2.17	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	750,470	LF			\$ 0.25	\$ -	\$ -	\$ 187,618	\$ 187,618
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	36,670	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 513,377	\$ 513,377	\$ 256,689	\$ 1,283,443
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,186	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 227,964	\$ 239,362	\$ 102,584	\$ 569,910
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	184	EA		\$ 400	\$ 1,200	\$ -	\$ 73,525	\$ 220,575	\$ 294,099
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	184	EA		\$ 10	\$ 15	\$ -	\$ 1,838	\$ 2,757	\$ 4,595
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	394	EA		\$ 400	\$ 1,200	\$ -	\$ 157,642	\$ 472,926	\$ 630,568
2.23	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 632,814	\$ 421,876	\$ -	\$ 632,814	\$ 421,876	\$ 1,054,690
2.24	Excess Materials Disposal to Certified Backfill	106,029	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,597,716	\$ 1,113,307	\$ 3,711,023
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	71	EA			\$ 4,000	\$ -	\$ -	\$ 284,000	\$ 284,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	85,899	CF		\$ 1.0	\$ 0.5	\$ -	\$ 85,899	\$ 42,949	\$ 128,848
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 37,471,503	\$ 27,164,952	\$ 17,236,589	\$ 81,873,044
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kv 5000 kcmil copper XLPE	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kv 5000 kcmil copper XLPE	108	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 636,984	\$ 1,063,420	\$ 303,834	\$ 2,004,238
3.3	Circuit #1- Cable Termination- 138kv 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 345kv 5000 kcmil copper XLPE	184,297	FT	\$ 167	\$ 100	\$ 67	\$ 30,777,607	\$ 18,466,564	\$ 12,311,043	\$ 61,555,215
3.5	Circuit #2- Cable Splicing- 345kv 5000 kcmil copper XLPE	105	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,230,810	\$ 1,033,880	\$ 295,394	\$ 2,560,085
3.6	Circuit #2- Cable Termination- 345kv 5000 kcmil copper XLPE	3	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 83,415	\$ 29,539	\$ 8,440	\$ 121,394
3.7	Circuit #3- Procurement & Installation- 138kv 5000 kcmil copper XLPE		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kv 5000 kcmil copper XLPE		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kv 5000 kcmil copper XLPE		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking (138kv)	36	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 959,724	\$ 575,834	\$ 383,890	\$ 1,919,448
3.10	Link Box & MH racking (345kv)	35	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 999,196	\$ 599,517	\$ 399,678	\$ 1,998,392
3.10	Fiber Optic Cable	125,687	FT	\$ 7	\$ 3	\$ 2	\$ 929,709	\$ 418,614	\$ 279,076	\$ 1,627,399
3.11	Ground Continuity Conductor	125,687	FT	\$ 13	\$ 8	\$ 5	\$ 1,638,837	\$ 946,048	\$ 630,699	\$ 3,215,584
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 65,241,174	\$ 39,963,042	\$ 25,809,297	\$ 131,013,513
Comp 247 - Jamaica to East Garden City 138 and 345kv Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)							\$ 105,556,133	\$ 81,077,308	\$ 48,656,028	\$ 235,289,469
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,892,000	\$ 2,594,667	\$ -	\$ 3,892,000	\$ 2,594,667	\$ 6,486,667
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,352,894.69		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.3	Construction Project Management / Supervision	1	LS		9,411,578.75		\$ -	\$ 9,411,579	\$ -	\$ 9,411,579
4.4	Utility PM and Project Oversight	1	LS		2,352,894.69		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.5	Site Accommodation, Facilities, Storage	1	LS	2,352,894.69			\$ 2,352,895	\$ -	\$ -	\$ 2,352,895
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,764,473	\$ -	\$ -	\$ 11,764,473	\$ -	\$ 11,764,473

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.7	LiDAR /GPR	1.0	LS		\$ 423,521	\$ 282,347	\$ -	\$ 423,521	\$ 282,347	\$ 705,868
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 988,216	\$ 658,811	\$ -	\$ 988,216	\$ 658,811	\$ 1,647,026
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,352,895		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 705,868		\$ -	\$ 705,868	\$ -	\$ 705,868
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 8,340,000	\$ -	\$ -	\$ 8,340,000	\$ 8,340,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 105,556,132.87			\$ 9,373,385	\$ -	\$ -	\$ 9,373,385
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 235,289	\$ -	\$ -	\$ 235,289	\$ 235,289
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,726,279	\$ 35,817,102	\$ 12,132,954	\$ 59,676,335

Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit

Total: \$ 5,354,910

NEXtera Energy- TO38 Core 3				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351
SUBTOTAL (Costs):	\$ 1,083,440	\$ 2,001,924	\$ 696,353	\$ 3,781,716
CONTRACTOR MARK-UP (OH&P)	\$ 195,019	\$ 360,346	\$ 125,343	\$ 680,709
SUBTOTAL:	\$ 1,278,459	\$ 2,362,270	\$ 821,696	\$ 4,462,425
CONTINGENCY ON ENTIRE PROJECT	\$ 255,692	\$ 472,454	\$ 164,339	\$ 892,485
TOTAL:	\$ 1,534,151	\$ 2,834,724	\$ 986,035	\$ 5,354,910

Description of Work: Rebuild 0.2 mile of UG line (trench, conduits and cable), single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.20	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	1,056	LF	\$ 30	\$ 18	\$ 12	\$ 31,680	\$ 19,008	\$ 12,672	\$ 63,360
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	0.20	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 8,000	\$ 24,000	\$ 8,000	\$ 40,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.20	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 27,960	\$ 18,640	\$ 46,600
2.2	Formwork in Trench	8,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 16,512	\$ 12,384	\$ 4,128	\$ 33,024
2.3	Trench Excavation	688	CY		\$ 17.5	\$ 7.5	\$ -	\$ 12,040	\$ 5,160	\$ 17,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	43	SF	\$ 50	\$ 25	\$ 14	\$ 2,150	\$ 1,054	\$ 602	\$ 3,806
2.5	Supply & Install Thermal Backfill	361	CY	\$ 350	\$ 245	\$ 105	\$ 126,420	\$ 88,494	\$ 37,926	\$ 252,840
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	168	CY	\$ 200	\$ 125	\$ 50	\$ 33,632	\$ 21,020	\$ 8,408	\$ 63,060
2.9	Conduit 8" SCH 40PVC	4,224	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 120,806	\$ 23,950	\$ 10,264	\$ 155,021
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	2,112	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 7,434	\$ 6,653	\$ 2,851	\$ 16,938
2.12	Warning Tape	2,112	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 317	\$ 528	\$ 211	\$ 1,056
2.13	Trench Box Shoring (Vault)	1	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 18,079	\$ 27,119	\$ 45,198
2.14	Splice Vault Excavation	137	CY		\$ 17.5	\$ 7.5	\$ -	\$ 2,396	\$ 1,027	\$ 3,422
2.15	Splice Vault Supply & Installation	1	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 35,000	\$ 16,500	\$ 38,500	\$ 90,000
2.16	Splice Vault Backfill	\$ 41	CY		\$ 14.0	\$ 6.0	\$ -	\$ 575	\$ 246	\$ 821
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	6,336	LF			\$ 0.25	\$ -	\$ -	\$ 1,584	\$ 1,584
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 5,696	\$ 5,696	\$ 2,848	\$ 14,241
2.21	PVMT, AGGREGATE, 10", BASE COURSE	113	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 2,529	\$ 2,656	\$ 1,138	\$ 6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$ 400	\$ 1,200	\$ -	\$ 673	\$ 2,018	\$ 2,691
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$ 10	\$ 15	\$ -	\$ 17	\$ 25	\$ 42
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LiDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS		-	\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

Other Comp. 138kV Upgrades

Total: \$ 16,870,335

Other Comp. 138kV Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Comp. 138kV Upgrades				
1. West Bus-Kings CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378
CONTRACTOR MARK-UP (OH&P)	\$ 829,380	\$ 872,432	\$ 442,722	\$ 2,144,534
SUBTOTAL:	\$ 5,437,050	\$ 5,719,276	\$ 2,902,287	\$ 14,058,612
CONTINGENCY ON ENTIRE PROJECT	\$ 1,087,410	\$ 1,143,855	\$ 580,457	\$ 2,811,722
TOTAL:	\$ 6,524,459	\$ 6,863,131	\$ 3,482,744	\$ 16,870,335

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1. West Bus-Kings CT Upgrade										
1.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
1.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
1.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
									\$ -	\$ -
TOTAL - West Bus-Kings-Pligrim CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,155,935.10	\$ 2,096,798.80	\$ 2,015,966.10	\$ 8,268,700.00
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.1	Mob / Demob	1.0	LS		\$ 123,383	\$ 82,255	\$ -	\$ 123,383	\$ 82,255	\$ 205,638
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.3	Construction Project Management / Supervision	1	LS		330,748.00		\$ -	\$ 330,748	\$ -	\$ 330,748
4.4	Utility PM and Project Oversight	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.5	Site Accommodation, Facilities, Storage	1	LS	82,687.00			\$ 82,687	\$ -	\$ -	\$ 82,687
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 413,435	\$ -	\$ -	\$ 413,435	\$ -	\$ 413,435
4.7	LiDAR	1.00	LS		\$ 14,884	\$ 9,922	\$ -	\$ 14,884	\$ 9,922	\$ 24,806
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,729	\$ 23,152	\$ -	\$ 34,729	\$ 23,152	\$ 57,881
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,687		\$ -	\$ 82,687	\$ -	\$ 82,687
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,806		\$ -	\$ 24,806	\$ -	\$ 24,806
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS		-	\$ 320,000	\$ -	\$ -	\$ 320,000	\$ 320,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,155,935.10			\$ 369,047	\$ -	\$ -	\$ 369,047
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,269	\$ -	\$ -	\$ 8,269	\$ 8,269
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378

NEXtera Energy- TO38 Core 3	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO37 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 _Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable.
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
42	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e. 3 circuits, 2 cable per circuit, so there are 6 passes.
43	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications -	
44	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
45	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
46	Substation pad is based on 8" base and 6" surfacing rock.
47	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
48	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
49	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
50	All substation segments construction period is based on milestone schedule provided
51	Assume concrete cantilever retaining wall for Sprain Brook expansion, the assumed dimension details please see the tab
52	Assume 70% rock for Sprain brook 345kV expansion excavation

NEXTera Energy- TO39 Core 4		
REVISION: 1		
NEXTera Energy- TO39 Core 4 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 54,287,315
Direct Labor, Material & Equipment Costs	2.Station 252 East Garden City 345/138 kV Substation Upgrades	\$ 158,123,262
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,095,138
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 327,024,035
Direct Labor, Material & Equipment Costs	12. Farragut 345kV Substation Expansion	\$ 68,962,346
Direct Labor, Material & Equipment Costs	13 - Northport 345/138kV AIS & 138KV GIS Substation	\$ 56,102,022
Direct Labor, Material & Equipment Costs	14.Pilgrim 138kV Substation Upgrades	\$ 1,090,486
Direct Labor, Material & Equipment Costs	15. Existing Ruland Road 138 kV Substation Upgrades	\$ 1,077,395
Direct Labor, Material & Equipment Costs	16.Existing East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 931,979,245
CONTRACTOR MARK-UP (OH&P)		\$ 149,271,464
SUBTOTAL (AFTER MU):		\$ 1,081,250,710
CONTINGENCY ON ENTIRE PROJECT		\$ 216,250,142
Substation TOTAL:		\$ 1,297,500,851
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(Northport To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 195,310,866
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 296,059,014
Direct Labor, Material & Equipment Costs	Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 398,396,284
Direct Labor, Material & Equipment Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit(EGC To Sprain Brook 345 kV)	\$ 117,895,360
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit(Pilgram to Northport kV)	\$ 93,067,293
Direct Labor, Material & Equipment Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit	\$ 130,556,641
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 8,268,700
Direct Labor, Material & Equipment Costs	Comp 87. Farragut to Sparin Brook Landing 345kV Offshore Submarine Cables - Single circuitFarragut-Sprain Brook 345KV	\$ 333,202,969
Direct Labor, Material & Equipment Costs	Comp 85 - Sprian Brook Sub to Sparin Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit Farragut-Sprain Brook 345KV	\$ 40,719,017
SUBTOTAL (Costs):		\$ 2,244,778,522
CONTRACTOR MARK-UP (OH&P)		\$ 404,060,134
SUBTOTAL (AFTER MU):		\$ 2,648,838,656
CONTINGENCY ON ENTIRE PROJECT		\$ 529,767,731
Transmission Line TOTAL:		\$ 3,178,606,387
NEXTera Energy- TO39 Core 4Total Direct Cost		\$ 4,476,107,238

NEXTera Energy- TO39 Core 4 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 15,736,579
Indirect Costs	2.Station 252 East Garden City 345/138 kV Substation Upgrades	\$ 76,129,096
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 334,752
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 100,738,741
Indirect Costs	12. Farragut 345kV Substation Expansion	\$ 19,220,895
Indirect Costs	13 - Northport 345/138kV AIS & 138KV GIS Substation	\$ 15,146,144
Indirect Costs	14.Pilgrim 138kV Substation Upgrades	\$ 347,380
Indirect Costs	15. Existing Ruland Road 138 kV Substation Upgrades	\$ 356,246
Indirect Costs	16.Existing East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 305,146,123
CONTRACTOR MARK-UP (OH&P)		\$ 54,926,302
SUBTOTAL (AFTER MU):		\$ 360,072,425
CONTINGENCY ON ENTIRE PROJECT		\$ 72,014,485
Substation TOTAL:		\$ 432,086,910
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(Northport To Dunwoodie 345 kV)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 49,373,632
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 74,702,824
Indirect Costs	Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 96,615,299
Indirect Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit(EGC To Sprain Brook 345 kV)	\$ 30,601,618
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 50,420,274
Indirect Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit(Pilgram to Northport kV)	\$ 23,919,365
Indirect Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit	\$ 33,606,126
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,645,378
Indirect Costs	Comp 87. Farragut to Sparin Brook Landing 345kV Offshore Submarine Cables - Single circuitFarragut-Sprain Brook 345KV	\$ 95,194,345
Indirect Costs	Comp 85 - Sprian Brook Sub to Sparin Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuitFarragut-Sprain Brook 345KV	\$ 10,573,404
SUBTOTAL (Costs):		\$ 579,581,051
CONTRACTOR MARK-UP (OH&P)		\$ 104,324,589
SUBTOTAL (AFTER MU):		\$ 683,905,640
CONTINGENCY ON ENTIRE PROJECT		\$ 136,781,128
Transmission Line TOTAL:		\$ 820,686,768
NEXTera Energy- TO39 Core 4 Total Indirect Cost		\$ 1,252,773,678
NEXTera Energy- TO39 Core 4 Total		\$ 5,728,880,916

NEXTera Energy- TO39 Core 4

1. Station 29 New Ruland Road 345/138 kV Substation

Total: \$ 97,499,274

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736.40
2. SUBSTATION FOUNDATIONS	\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,218.94
3. SUBSTATION STRUCTURES	\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495.18
4. MAJOR EQUIPMENT	\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,118.75
6. CONDUIT & CABLE TRENCH	\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,295.54
7. GROUND GRID	\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,313.85
8. CONTROL ENCLOSURE	\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,857.96
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579.19
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 29,397,161	\$ 19,987,089	\$ 9,149,644	\$ 58,533,894
SUBTOTAL (Costs):	\$ 35,142,161	\$ 23,434,089	\$ 11,447,644	\$ 70,023,894
CONTRACTOR MARK-UP (OH&P)	\$ 5,636,189	\$ 3,804,496	\$ 1,784,816	\$ 11,225,501
SUBTOTAL:	\$ 40,778,350	\$ 27,238,585	\$ 13,232,460	\$ 81,249,395
CONTINGENCY ON ENTIRE PROJECT	\$ 8,155,670	\$ 5,447,717	\$ 2,646,492	\$ 16,249,879
TOTAL:	\$ 48,934,020	\$ 32,686,303	\$ 15,878,952	\$ 97,499,274

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1. Station 29 New Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 37,800	\$ 25,200	\$ 63,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	5,647	CY		24.50	10.50	\$ -	\$ 138,343	\$ 59,290	\$ 197,633
1.5	Site Grading- Excavation for Substation Pad	16,940	CY		9.00	6.00	\$ -	\$ 152,460	\$ 101,640	\$ 254,100
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	9,148	CY		21.00	9.00	\$ -	\$ 192,099.60	\$ 82,328.40	\$ 274,428.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	13,721	CY		2.40	1.60	\$ -	\$ 32,931	\$ 21,954	\$ 54,886
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	9,148	CY	25.00	2.40	1.60	\$ 228,690	\$ 21,954	\$ 14,636	\$ 265,280
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	16,940	SY	11.00	6.00	4.00	\$ 186,340	\$ 101,640	\$ 67,760	\$ 355,740
1.11	Site Surfacing - Aggregate 6" Thick	16,940	SY	16.50	4.50	3.00	\$ 279,510	\$ 76,230	\$ 50,820	\$ 406,560
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,439	LF	13.85	13.85	6.92	\$ 19,927	\$ 19,927	\$ 9,964	\$ 49,818
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	11,952	SF	1.50	1.50	1.00	\$ 17,928	\$ 17,928	\$ 11,952	\$ 47,808
1.17	Erosion Control-Silt fence install & remove	2,700	LF	2.41	3.16	0.72	\$ 6,507	\$ 8,532	\$ 1,944	\$ 16,983
1.18	Temporary fencing	1,800	LF	7.50	5.25	2.25	\$ 13,500	\$ 9,450	\$ 4,050	\$ 27,000
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.10	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.11	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.12	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.13	345/138KV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,219
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	15	EA	4,810.00	2,886.00	1,924.00	\$ 72,150	\$ 43,290	\$ 28,860	\$ 144,300
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.10	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.11	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.12	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.20	AL. Bus fittings	1	LS	22,500.00	22,500.00	11,250.00	\$ 22,500	\$ 22,500	\$ 11,250	\$ 56,250
3.21	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495
4. MAJOR EQUIPMENT										
4.1	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600
4.2	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
4.3	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.4	345/138KV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800
4.5	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.6	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.8	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	37,500	LF	5.30	1.43	0.29	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,750	LF	11.15	10.80	5.40	\$ 75,263	\$ 72,900	\$ 36,450	\$ 184,613
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.14	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,296
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,705	LF	2.09	3.42	1.46	\$ 26,566	\$ 43,391	\$ 18,596	\$ 88,554
7.2	Caweld, DSA, 4/0 , T, CROSS	351	EA	165.00	75.00		\$ 57,915	\$ 26,325	\$ -	\$ 84,240
7.3	Ground Rod, 3/4" x 15'	312	EA	135.00	67.50	7.50	\$ 42,120	\$ 21,060	\$ 2,340	\$ 65,520
TOTAL - GROUND GRID							\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,314
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.15	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,858
1. Station 29 New Ruland Road 345/138 kV Substation							\$ 31,906,422	\$ 14,324,879	\$ 8,056,013	\$ 54,287,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		582,256.23	249,538.38	\$ -	\$ 582,256	\$ 249,538	\$ 831,795
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,711,892.59		\$ -	\$ 1,711,893	\$ -	\$ 1,711,893
9.4	Utility PM and Project Oversight	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.5	Site Accommodation, Facilities, Storage	1	LS	427,973.15			\$ 427,973	\$ -	\$ -	\$ 427,973
	Engineering									
9.6	Design Engineering	1.00	LS		3,423,785.17		\$ -	\$ 3,423,785	\$ -	\$ 3,423,785
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		299,581.20		\$ -	\$ 299,581	\$ -	\$ 299,581
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,604,899.30		\$ -	\$ 1,604,899	\$ -	\$ 1,604,899
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		128,391.94		\$ -	\$ 128,392	\$ -	\$ 128,392
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,940,000	\$ -	\$ -	\$ 1,940,000	\$ 1,940,000
9.20	Sales Tax on Materials	8.80%	LS	31,906,422.41			\$ 2,807,765	\$ -	\$ -	\$ 2,807,765
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		54,287.31		\$ -	\$ 54,287	\$ -	\$ 54,287
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579

NEXTera Energy- TO39 Core 4

2.Station 252 East Garden City 345/138 kV Substation Upgrades

Total: \$ 326,629,659

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 252 East Garden City 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541.10
2. SUBSTATION FOUNDATIONS	\$ 4,940,586	\$ 5,259,191	\$ 3,304,826	\$ 13,504,603.49
3. SUBSTATION STRUCTURES	\$ 1,403,520	\$ 901,180	\$ 499,166	\$ 2,803,866.69
4. MAJOR EQUIPMENT	\$ 83,434,236	\$ 15,021,057	\$ 9,912,305	\$ 108,367,597.50
5. LOW VOLTAGE & CONTROL CABLE	\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877.20
6. CONDUIT & CABLE TRENCH	\$ 8,724,708	\$ 4,948,997	\$ 2,709,691	\$ 16,383,396.54
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924.35
8. CONTROL ENCLOSURE	\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,454.73
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,565,337	\$ 26,272,726	\$ 39,291,033	\$ 76,129,096
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 99,049,709	\$ 48,374,371	\$ 51,608,278	\$ 199,032,358
SUBTOTAL (Costs):	\$ 116,659,709	\$ 58,940,371	\$ 58,652,278	\$ 234,252,358
CONTRACTOR MARK-UP (OH&P)	\$ 18,885,548	\$ 9,341,347	\$ 9,712,130	\$ 37,939,024
SUBTOTAL:	\$ 135,545,257	\$ 68,281,718	\$ 68,364,407	\$ 272,191,382
CONTINGENCY ON ENTIRE PROJECT	\$ 27,109,051	\$ 13,656,344	\$ 13,672,881	\$ 54,438,276
TOTAL:	\$ 162,654,308	\$ 81,938,062	\$ 82,037,289	\$ 326,629,659

Description of Work: New East Garden City 345 kV/138 kV GIS Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 252 East Garden City 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	166	CY	703.89	804.44	502.78	\$ 116,775	\$ 133,457	\$ 83,410	\$ 333,641
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	54	CY	703.89	804.44	502.78	\$ 37,658	\$ 43,038	\$ 26,898	\$ 107,594
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.17	345kV, Phase Angle Regulator with oil containment	890	CY	703.89	804.44	502.78	\$ 626,458	\$ 715,952	\$ 447,470	\$ 1,789,879
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.21	345kV, Surge arrester	80	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	1,885	CY	703.89	804.44	502.78	\$ 1,326,795	\$ 1,516,337	\$ 947,711	\$ 3,790,843
2.31	Precast Firewall for transformer, PARs, reactors	28,530	SF	25.00	15.00	10.00	\$ 713,250	\$ 427,950	\$ 285,300	\$ 1,426,500
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 4,940,586	\$ 5,259,191	\$ 3,304,826	\$ 13,504,603
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	15	EA	8,346.00	5,758.74	3,839.16	\$ 125,190	\$ 86,381	\$ 57,587	\$ 269,159
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	18	EA	8,346.00	5,758.74	3,839.16	\$ 150,228	\$ 103,657	\$ 69,105	\$ 322,990
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	5	EA	8,346.00	5,758.74	3,839.16	\$ 41,730	\$ 28,794	\$ 19,196	\$ 89,720
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	4,896.84	4,896.84	2,448.42	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	1,050	LF	25.00	184.94	123.29	\$ 26,250	\$ 194,185	\$ 129,457	\$ 349,892
3.20	AL. Bus fittings	1	LS	31,500.00	31,500.00	15,750.00	\$ 31,500	\$ 31,500	\$ 15,750	\$ 78,750
3.21	Steel grating and support beams-transformer moat	346,240	LB	2.73	1.17	0.50	\$ 945,864	\$ 404,755	\$ 173,466	\$ 1,524,085
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,403,520	\$ 901,180	\$ 499,166	\$ 2,803,867
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	18.00	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	15	EA	17,400.00	5,460.00	2,340.00	\$ 261,000	\$ 81,900	\$ 35,100	\$ 378,000
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.11	Transport & Testing- Shunt Reactor	6	EA		272,900.20	178,266.80	\$ -	\$ 1,637,401	\$ 1,069,601	\$ 2,707,002

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	345kV, Phase Angle Regulator with oil containment	2	EA	25,764,000.00	3,520.00	880.00	\$ 51,528,000	\$ 7,040	\$ 1,760	\$ 51,536,800
4.11	Transport & Testing- PARs	2	EA		1,215,400.00	806,600.00	\$ -	\$ 2,430,800	\$ 1,613,200	\$ 4,044,000
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA		-	-	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	15	EA	6,669.00	5,460.00	2,340.00	\$ 100,035	\$ 81,900	\$ 35,100	\$ 217,035
4.18	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 83,434,236	\$ 15,021,057	\$ 9,912,305	\$ 108,367,598
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	16,800	LF	5.30	1.43	0.29	\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,450	LF	11.15	10.80	5.40	\$ 38,468	\$ 37,260	\$ 18,630	\$ 94,358
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
6.16										
6.17							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,724,708	\$ 4,948,997	\$ 2,709,691	\$ 16,383,397
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0 , T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	10	EA	21,328.12	17,062.49	4,265.62	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
8.4	Backup Line Relays (87L): GE L90	10	EA	21,328.12	17,062.49	4,265.62	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.22	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.23	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
2.Station 252 East Garden City 345/138 kV Substation Upgrades							\$ 106,094,372	\$ 32,667,646	\$ 19,361,244	\$ 158,123,262
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,821,011.14	780,433.35	\$ -	\$ 1,821,011	\$ 780,433	\$ 2,601,444
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,916,130.46		\$ -	\$ 4,916,130	\$ -	\$ 4,916,130
9.4	Utility PM and Project Oversight	1	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.5	Site Accommodation, Facilities, Storage	1	LS	1,229,032.62			\$ 1,229,033	\$ -	\$ -	\$ 1,229,033
	Engineering									
9.6	Design Engineering	1.00	LS		9,832,260.93		\$ -	\$ 9,832,261	\$ -	\$ 9,832,261
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		860,322.83		\$ -	\$ 860,323	\$ -	\$ 860,323
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,608,872.31		\$ -	\$ 4,608,872	\$ -	\$ 4,608,872
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		368,709.78		\$ -	\$ 368,710	\$ -	\$ 368,710
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 6,520,000	\$ -	\$ -	\$ 6,520,000	\$ 6,520,000
9.20	Sales Tax on Materials	8.80%	LS	106,094,371.82			\$ 9,336,305	\$ -	\$ -	\$ 9,336,305
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		158,123.26		\$ -	\$ 158,123	\$ -	\$ 158,123
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,565,337	\$ 26,272,726	\$ 39,291,033	\$ 76,129,096

NEXTera Energy- TO39 Core 4

3.Station 48 Valley Stream 345/138 kV Substation Upgrades

Total: \$ 143,522,216

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648.03
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,008.98
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326.07
4. MAJOR EQUIPMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,512.50
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,506.90
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146.28
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324.00
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282.34
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.Station 48 Valley Stream 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	620,000.00	415,000.00	\$ -	\$ 620,000	\$ 415,000	\$ 1,035,000
1.3	New Access Road - 20'	889	SY	4.85	7.20	4.80	\$ 4,312	\$ 6,401	\$ 4,267	\$ 14,980
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	11,761	CY		9.00	6.00	\$ -	\$ 105,849	\$ 70,566	\$ 176,415
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,057	CY		2.40	1.60	\$ -	\$ 16,937	\$ 11,291	\$ 28,228
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,704	CY	25.00	2.40	1.60	\$ 117,600	\$ 11,290	\$ 7,526	\$ 136,416
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,712	SY	11.00	6.00	4.00	\$ 95,832	\$ 52,272	\$ 34,848	\$ 182,952
1.11	Site Surfacing - Aggregate 6" Thick	8,712	SY	16.50	4.50	3.00	\$ 143,748	\$ 39,204	\$ 26,136	\$ 209,088
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,222	LF	13.85	13.85	6.92	\$ 30,770	\$ 30,770	\$ 15,385	\$ 76,926
1.13	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
1.14	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,583	LF	2.41	3.16	0.72	\$ 6,225	\$ 8,162	\$ 1,860	\$ 16,247
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	333	SY	19.50	26.00	19.50	\$ 6,500	\$ 8,667	\$ 6,500	\$ 21,667
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345KV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

NEXTera Energy- TO39 Core 4

4.Barrett 138 kV Substation Upgrades

Total: \$ 77,248,534

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
4.Barrett 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,399.86
2. SUBSTATION FOUNDATIONS	\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,923.90
3. SUBSTATION STRUCTURES	\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,415.76
4. MAJOR EQUIPMENT	\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679.20
6. CONDUIT & CABLE TRENCH	\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,906.57
7. GROUND GRID	\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125.40
8. CONTROL ENCLOSURE	\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,873.67
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 22,313,583	\$ 13,117,388	\$ 8,801,554	\$ 44,232,524
SUBTOTAL (Costs):	\$ 28,058,583	\$ 16,564,388	\$ 11,099,554	\$ 55,722,524
CONTRACTOR MARK-UP (OH&P)	\$ 4,361,145	\$ 2,567,950	\$ 1,722,160	\$ 8,651,254
SUBTOTAL:	\$ 32,419,728	\$ 19,132,338	\$ 12,821,713	\$ 64,373,779
CONTINGENCY ON ENTIRE PROJECT	\$ 6,483,946	\$ 3,826,468	\$ 2,564,343	\$ 12,874,756
TOTAL:	\$ 38,903,673	\$ 22,958,805	\$ 15,386,056	\$ 77,248,534

Description of Work: Construct a new Barrett 138kV GIS substation adjacent to the existing Barrett 138kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 23,760	\$ 15,840	\$ 39,600
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,115	SY	4.85	7.20	4.80	\$ 10,257	\$ 15,227	\$ 10,151	\$ 35,636
1.4	Strip and Dispose Top Soil	3,549	CY		24.50	10.50	\$ -	\$ 86,959	\$ 37,268	\$ 124,227
1.5	Site Grading- Excavation for Substation Pad	10,648	CY		9.00	6.00	\$ -	\$ 95,832	\$ 63,888	\$ 159,720
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	5,750	CY		21.00	9.00	\$ -	\$ 120,748.32	\$ 51,749.28	\$ 172,497.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	8,625	CY		2.40	1.60	\$ -	\$ 20,700	\$ 13,800	\$ 34,500
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	5,750	CY	25.00	2.40	1.60	\$ 143,748	\$ 13,800	\$ 9,200	\$ 166,748
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	10,648	SY	11.00	6.00	4.00	\$ 117,128	\$ 63,888	\$ 42,592	\$ 223,608
1.11	Site Surfacing - Aggregate 6" Thick	10,648	SY	16.50	4.50	3.00	\$ 175,692	\$ 47,916	\$ 31,944	\$ 255,552
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,056	LF	13.85	13.85	6.92	\$ 14,623	\$ 14,623	\$ 7,312	\$ 36,559
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	8,896	SF	1.50	1.50	1.00	\$ 13,344	\$ 13,344	\$ 8,896	\$ 35,584
1.17	Erosion Control-Silt fence install & remove	1,620	LF	2.41	3.16	0.72	\$ 3,904	\$ 5,119	\$ 1,166	\$ 10,190
1.18	Temporary fencing	1,080	LF	7.50	5.25	2.25	\$ 8,100	\$ 5,670	\$ 2,430	\$ 16,200
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7					-	-	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annn	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

NEXTera Energy- TO39 Core 4
5.Dunwoodie 345 kV GIS Substation

Total: \$ 64,677,743

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
5.Dunwoodie 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913.33
2. SUBSTATION FOUNDATIONS	\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,636.77
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,510.66
4. MAJOR EQUIPTMENT	\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,524.75
6. CONDUIT & CABLE TRENCH	\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157.00
7. GROUND GRID	\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001.14
8. CONTROL ENCLOSURE	\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,195.83
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 11,599,927	\$ 9,176,864	\$ 6,637,039	\$ 27,413,830
SUBTOTAL (Costs):	\$ 21,764,927	\$ 15,275,864	\$ 10,703,039	\$ 47,743,830
CONTRACTOR MARK-UP (OH&P)	\$ 2,697,887	\$ 2,017,775	\$ 1,438,627	\$ 6,154,289
SUBTOTAL:	\$ 24,462,814	\$ 17,293,639	\$ 12,141,665	\$ 53,898,119
CONTINGENCY ON ENTIRE PROJECT	\$ 4,892,563	\$ 3,458,728	\$ 2,428,333	\$ 10,779,624
TOTAL:	\$ 29,355,377	\$ 20,752,367	\$ 14,569,999	\$ 64,677,743

Description of Work: Construct a new Dunwoodie 345kV GIS substation. Loop in the Pleasantville (2) and Sprain Brook lines and connect back to the existing Dunwoodie 345kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5.Dunwoodie 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 17,137	\$ 11,425	\$ 28,562
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,263	SY	4.85	7.20	4.80	\$ 6,124	\$ 9,092	\$ 6,061	\$ 21,278
1.4	Strip and Dispose Top Soil	2,560	CY		24.50	10.50	\$ -	\$ 62,720	\$ 26,880	\$ 89,600
1.5	Site Grading- Excavation for Substation Pad	7,680	CY		9.00	6.00	\$ -	\$ 69,120	\$ 46,080	\$ 115,200
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	4,147	CY		21.00	9.00	\$ -	\$ 87,091.20	\$ 37,324.80	\$ 124,416.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	6,221	CY		2.40	1.60	\$ -	\$ 14,930	\$ 9,953	\$ 24,883
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,147	CY	25.00	2.40	1.60	\$ 103,680	\$ 9,953	\$ 6,636	\$ 120,269
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	7,680	SY	11.00	6.00	4.00	\$ 84,480	\$ 46,080	\$ 30,720	\$ 161,280
1.11	Site Surfacing - Aggregate 6" Thick	7,680	SY	16.50	4.50	3.00	\$ 126,720	\$ 34,560	\$ 23,040	\$ 184,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	864	LF	13.85	13.85	6.92	\$ 11,965	\$ 11,965	\$ 5,982	\$ 29,912
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	325,073.45	83,781.82	55,348.36	\$ 325,073	\$ 83,782	\$ 55,348	\$ 464,204
1.16	Seeding	7,296	SF	1.50	1.50	1.00	\$ 10,944	\$ 10,944	\$ 7,296	\$ 29,184
1.17	Erosion Control-Silt fence install & remove	2,100	LF	2.41	3.16	0.72	\$ 5,061	\$ 6,636	\$ 1,512	\$ 13,209
1.18	Temporary fencing	1,400	LF	7.50	5.25	2.25	\$ 10,500	\$ 7,350	\$ 3,150	\$ 21,000
1.19	Substation entrance with asphalt	486	SY	19.50	26.00	19.50	\$ 9,479	\$ 12,639	\$ 9,479	\$ 31,597
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
4.28	Transport & Testing- GIL	0	LS		-	-				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
5.Dunwoodie 345 kV GIS Substation							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931
9.4	Utility PM and Project Oversight	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733
	Engineering									
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565

NEXTera Energy- TO39 Core 4
6.Elwood 138 kV Substation Upgrades

Total: \$ 7,946,839

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 60,000	\$ 40,000	\$ 100,000.00
2. SUBSTATION FOUNDATIONS	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,398.60
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,510.66
4. MAJOR EQUIPMENT	\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,049.50
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410.00
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312.46
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,562.57
SUBTOTAL (Costs):	\$ 3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$ 692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$ 4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$ 908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$ 5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVar reactor (1 block) at the exisitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVar)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7" Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

NEXtera Energy- TO39 Core 4

7.Jamaica 138 kV Substation Upgrades

Total: \$ 2,024,724

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
7.Jamaica 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES	\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT	\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752
SUBTOTAL (Costs):	\$ 658,333	\$ 579,029	\$ 192,528	\$ 1,429,890
CONTRACTOR MARK-UP (OH&P)	\$ 118,500	\$ 104,225	\$ 34,655	\$ 257,380
SUBTOTAL:	\$ 776,832	\$ 683,255	\$ 227,183	\$ 1,687,270
CONTINGENCY ON ENTIRE PROJECT	\$ 155,366	\$ 136,651	\$ 45,437	\$ 337,454
TOTAL:	\$ 932,199	\$ 819,906	\$ 272,620	\$ 2,024,724

Description of Work: Add an additional terminal at the existing Jamaica 138kV substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7" Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345/138kV Gas-Insulated Bus Conductor	246	LF	550.00	275.00	82.50	\$ 135,300	\$ 67,650	\$ 20,295	\$ 223,245
4.30	345/138kV Gas-Insulated Bus Conductor-elbow	6	EA	2,500.00	1,250.00	375.00	\$ 15,000	\$ 7,500	\$ 2,250	\$ 24,750
4.31	Transport & Testing- GIL	1	LS		27,054.00	18,036.00	\$ -	\$ 27,054	\$ 18,036	\$ 45,090
TOTAL - MAJOR EQUIPMENT							\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
7.Jamaica 138 kV Substation Upgrades							\$ 595,020	\$ 355,092	\$ 145,026	\$ 1,095,138
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,504.13	7,501.77	\$ -	\$ 17,504	\$ 7,502	\$ 25,006
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,805.51		\$ -	\$ 43,806	\$ -	\$ 43,806
9.4	Utility PM and Project Oversight	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.5	Site Accommodation, Facilities, Storage	1	LS	10,951.38			\$ 10,951	\$ -	\$ -	\$ 10,951
	Engineering									
9.6	Design Engineering	1.00	LS		87,611.01		\$ -	\$ 87,611	\$ -	\$ 87,611
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,665.96		\$ -	\$ 7,666	\$ -	\$ 7,666
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		41,067.66		\$ -	\$ 41,068	\$ -	\$ 41,068
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		10,951.38		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,285.41		\$ -	\$ 3,285	\$ -	\$ 3,285
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	595,019.53			\$ 52,362	\$ -	\$ -	\$ 52,362
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,095.14		\$ -	\$ 1,095	\$ -	\$ 1,095
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752

NEXTera Energy- TO39 Core 4

8.Newbridge 345/138 kV GIS Substation Upgrades

Total: \$ 89,858,233

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000.00
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,471.69
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027.08
4. MAJOR EQUIPTMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099.00
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,465.58
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307.00
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282.34
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,372.85
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION	#REF!									
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
	Engineering									
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

NEXTera Energy- TO39 Core 4

9.Rainey 345kV GIS Substation Upgrades

Total: \$ 45,946,157

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
9.Rainey 345kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID	\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE	\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 8,610,766	\$ 8,924,115	\$ 5,696,359	\$ 23,231,241
SUBTOTAL (Costs):	\$ 13,740,766	\$ 12,002,115	\$ 7,748,359	\$ 33,491,241
CONTRACTOR MARK-UP (OH&P)	\$ 1,857,738	\$ 1,791,021	\$ 1,148,465	\$ 4,797,223
SUBTOTAL:	\$ 15,598,504	\$ 13,793,136	\$ 8,896,824	\$ 38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$ 3,119,701	\$ 2,758,627	\$ 1,779,365	\$ 7,657,693
TOTAL:	\$ 18,718,205	\$ 16,551,763	\$ 10,676,189	\$ 45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.Rainey 345kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,856	\$ 5,904	\$ 14,760
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	989	SY	4.85	7.20	4.80	\$ 4,796	\$ 7,120	\$ 4,747	\$ 16,663
1.4	Strip and Dispose Top Soil	1,323	CY		24.50	10.50	\$ -	\$ 32,412	\$ 13,891	\$ 46,303
1.5	Site Grading- Excavation for Substation Pad	3,969	CY		9.00	6.00	\$ -	\$ 35,719	\$ 23,813	\$ 59,532
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,143	CY		21.00	9.00	\$ -	\$ 45,006.19	\$ 19,288.37	\$ 64,294.56
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,215	CY		2.40	1.60	\$ -	\$ 7,715	\$ 5,144	\$ 12,859
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,143	CY	25.00	2.40	1.60	\$ 53,579	\$ 5,144	\$ 3,429	\$ 62,151
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,969	SY	11.00	6.00	4.00	\$ 43,657	\$ 23,813	\$ 15,875	\$ 83,345
1.11	Site Surfacing - Aggregate 6" Thick	3,969	SY	16.50	4.50	3.00	\$ 65,485	\$ 17,860	\$ 11,906	\$ 95,251
1.12	7' Station Fence w/ Barbed Wire & Grounding	726	LF	13.85	13.85	6.92	\$ 10,054	\$ 10,054	\$ 5,027	\$ 25,134
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	109,761.60	38,400.00	25,368.00	\$ 109,762	\$ 38,400	\$ 25,368	\$ 173,530
1.16	Seeding	3,000	SF	1.50	1.50	1.00	\$ 4,500	\$ 4,500	\$ 3,000	\$ 12,000
1.17	Erosion Control-Silt fence install & remove	1,200	LF	2.41	3.16	0.72	\$ 2,892	\$ 3,792	\$ 864	\$ 7,548
1.18	Temporary fencing	800	LF	7.50	5.25	2.25	\$ 6,000	\$ 4,200	\$ 1,800	\$ 12,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
	Engineering									
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

NEXtera Energy- TO39 Core 4

10.Shore Road 138kV Substation Upgrades

Total: \$ 13,943,860

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
10.Shore Road 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS	\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES	\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT	\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936
SUBTOTAL (Costs):	\$ 6,942,247	\$ 2,219,499	\$ 685,612	\$ 9,847,359
CONTRACTOR MARK-UP (OH&P)	\$ 1,249,604	\$ 399,510	\$ 123,410	\$ 1,772,525
SUBTOTAL:	\$ 8,191,851	\$ 2,619,009	\$ 809,023	\$ 11,619,883
CONTINGENCY ON ENTIRE PROJECT	\$ 1,638,370	\$ 523,802	\$ 161,805	\$ 2,323,977
TOTAL:	\$ 9,830,222	\$ 3,142,811	\$ 970,827	\$ 13,943,860

Description of Work: Add a new 250 MVAR reactor at the existing Shore Road 138kV station (5 block of 50 MVAR)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 540	\$ 360	\$ 900
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	81	CY		24.50	10.50	\$ -	\$ 1,976	\$ 847	\$ 2,823
1.5	Site Grading- Excavation for Substation Pad	242	CY		9.00	6.00	\$ -	\$ 2,178	\$ 1,452	\$ 3,630
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	131	CY		21.00	9.00	\$ -	\$ 2,744.28	\$ 1,176.12	\$ 3,920.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	196	CY		2.40	1.60	\$ -	\$ 470	\$ 314	\$ 784
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	131	CY	25.00	2.40	1.60	\$ 3,267	\$ 314	\$ 209	\$ 3,790
1.9	Blasting		EA		-	-	\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	242	SY	11.00	6.00	4.00	\$ 2,662	\$ 1,452	\$ 968	\$ 5,082
1.11	Site Surfacing - Aggregate 6" Thick	242	SY	16.50	4.50	3.00	\$ 3,993	\$ 1,089	\$ 726	\$ 5,808
1.12	7" Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL										
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534
	Engineering									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

NEXTera Energy- TO39 Core 4

11.Sprain Brook 345kV Substation Expansion

Total: \$ 605,712,091

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
11.Sprain Brook 345kV Substation Expansion				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS	\$ 2,055,398	\$ 2,320,526	\$ 1,451,641	\$ 5,827,565
3. SUBSTATION STRUCTURES	\$ 1,194,199	\$ 952,276	\$ 590,762	\$ 2,737,237
4. MAJOR EQUIPTMENT	\$ 14,085,266	\$ 2,251,802	\$ 1,339,747	\$ 17,676,815
5. LOW VOLTAGE & CONTROL CABLE	\$ 252,691	\$ 68,330	\$ 13,666	\$ 334,687
6. CONDUIT & CABLE TRENCH	\$ 638,014	\$ 204,208	\$ 75,352	\$ 917,574
7. GROUND GRID	\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE	\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,636,738	\$ 74,643,634	\$ 18,458,369	\$ 100,738,741
SUBTOTAL (Costs):	\$ 57,256,032	\$ 206,107,962	\$ 164,398,783	\$ 427,762,776
CONTRACTOR MARK-UP (OH&P)	\$ 10,306,086	\$ 37,099,433	\$ 29,591,781	\$ 76,997,300
SUBTOTAL:	\$ 67,562,117	\$ 243,207,395	\$ 193,990,564	\$ 504,760,076
CONTINGENCY ON ENTIRE PROJECT	\$ 13,512,423	\$ 48,641,479	\$ 38,798,113	\$ 100,952,015
TOTAL:	\$ 81,074,541	\$ 291,848,874	\$ 232,788,676	\$ 605,712,091

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11.Sprain Brook 345kV Substation Expansion										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.4	ACRE	-	42,000.00	28,000.00	\$ -	\$ 224,902	\$ 149,935	\$ 374,837
1.2	Demolition	1	LS	-	120,000.00	80,000.00	\$ -	\$ 120,000	\$ 80,000	\$ 200,000
1.3	New Access Road - 20'	3,631	SY	4.85	7.20	4.80	\$ 17,611	\$ 26,144	\$ 17,429	\$ 61,184
1.4	Strip and Dispose Top Soil	8,639	CY		24.50	10.50	\$ -	\$ 211,658	\$ 90,711	\$ 302,369
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	56,901	CY		9.00	6.00	\$ -	\$ 512,110	\$ 341,407	\$ 853,517
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	227,604	CY		120.00	180.00	\$ -	\$ 27,312,533	\$ 40,968,800	\$ 68,281,333
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	384,083	CY		21.00	9.00	\$ -	\$ 8,065,732.50	\$ 3,456,742.50	\$ 11,522,475
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	11,380	SY	11.00	6.00	4.00	\$ 125,182	\$ 68,281	\$ 45,521	\$ 238,985
1.12	Site Surfacing - Aggregate 6" Thick	11,380	SY	16.50	4.50	3.00	\$ 187,774	\$ 51,211	\$ 34,141	\$ 273,125
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,300	LF	13.85	13.85	6.92	\$ 18,002	\$ 18,002	\$ 9,001	\$ 45,006
1.14	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.15	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	219,523.20	76,800.00	50,736.00	\$ 219,523	\$ 76,800	\$ 50,736	\$ 347,059
1.17	Seeding	130,834	SF	1.50	1.50	1.00	\$ 196,251	\$ 196,251	\$ 130,834	\$ 523,336
1.18	Erosion Control-Silt fence install & remove	3,900	LF	2.41	3.16	0.72	\$ 9,399	\$ 12,324	\$ 2,808	\$ 24,531
1.19	Temporary fencing	1,430	LF	7.50	5.25	2.25	\$ 10,725	\$ 7,508	\$ 3,218	\$ 21,450
1.20	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Concrete Retaining Wall- Soil excavation	99,073	CY		9.00	6.00	\$ -	\$ 891,661	\$ 594,440	\$ 1,486,101
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	\$ 668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727
1.26	Concrete Retaining Walll- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	700	CY	703.89	804.44	502.78	\$ 492,720	\$ 563,108	\$ 351,943	\$ 1,407,770
2.15	345kV, Shunt Reactor with oil containment-225MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	180	CY	703.89	804.44	502.78	\$ 126,699	\$ 144,799	\$ 90,500	\$ 361,998
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,055,398	\$ 2,320,526	\$ 1,451,641	\$ 5,827,565
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,194,199	\$ 952,276	\$ 590,762	\$ 2,737,237
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
11.Sprain Brook 345kV Substation Expansion							\$ 49,619,293	\$ 131,464,328	\$ 145,940,414	\$ 327,024,035
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,709,165.96	4,161,071.12	\$ -	\$ 9,709,166	\$ 4,161,071	\$ 13,870,237
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,270,240.35		\$ -	\$ 3,270,240	\$ -	\$ 3,270,240
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		13,080,961.40		\$ -	\$ 13,080,961	\$ -	\$ 13,080,961
9.4	Utility PM and Project Oversight	1	LS		3,270,240.35		\$ -	\$ 3,270,240	\$ -	\$ 3,270,240
9.5	Site Accommodation, Facilities, Storage	1	LS	3,270,240.35			\$ 3,270,240	\$ -	\$ -	\$ 3,270,240
	Engineering									
9.6	Design Engineering	1.00	LS		26,161,922.80		\$ -	\$ 26,161,923	\$ -	\$ 26,161,923
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,289,168.25		\$ -	\$ 2,289,168	\$ -	\$ 2,289,168
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		12,263,401.31		\$ -	\$ 12,263,401	\$ -	\$ 12,263,401
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,270,240.35		\$ -	\$ 3,270,240	\$ -	\$ 3,270,240
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		981,072.11		\$ -	\$ 981,072	\$ -	\$ 981,072
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,124,464.00	\$ -	\$ -	\$ 2,124,464	\$ 2,124,464
9.17	Legal Fees (Real estate)	1.00	LS		-	63,733.92	\$ -	\$ -	\$ 63,734	\$ 63,734
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 12,100,000	\$ -	\$ -	\$ 12,100,000	\$ 12,100,000
9.20	Sales Tax on Materials	8.80%	LS	49,619,293.47			\$ 4,366,498	\$ -	\$ -	\$ 4,366,498
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		327,024.04		\$ -	\$ 327,024	\$ -	\$ 327,024
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,636,738	\$ 74,643,634	\$ 18,458,369	\$ 100,738,741

NEXTera Energy- TO39 Core 4

12. Farragut 345kV Substation Expansion

Total: \$ 123,390,030

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
12. Farragut 345kV Substation Expansion				
1. MARINE CONSTRUCITON CIVIL	\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS	\$ 700,769	\$ 746,729	\$ 469,199	\$ 1,916,698
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPTMENT	\$ 8,462,488	\$ 3,449,420	\$ 2,294,480	\$ 14,206,388
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID	\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE	\$ 2,516,145	\$ 1,907,422	\$ 727,723	\$ 5,151,291
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,996,206	\$ 13,131,810	\$ 3,092,879	\$ 19,220,895
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 25,243,285	\$ 33,606,412	\$ 19,073,544	\$ 77,923,241
SUBTOTAL (Costs):	\$ 30,373,285	\$ 36,684,412	\$ 21,125,544	\$ 88,183,241
CONTRACTOR MARK-UP (OH&P)	\$ 4,851,591	\$ 6,233,834	\$ 3,556,358	\$ 14,641,783
SUBTOTAL:	\$ 35,224,877	\$ 42,918,246	\$ 24,681,902	\$ 102,825,025
CONTINGENCY ON ENTIRE PROJECT	\$ 7,044,975	\$ 8,583,649	\$ 4,936,380	\$ 20,565,005
TOTAL:	\$ 42,269,852	\$ 51,501,895	\$ 29,618,282	\$ 123,390,030

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12. Farragut 345kV Substation Expansion										
1. MARINE CONSTRUCITON CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	68,400.00	45,600.00	\$ -	\$ 68,400	\$ 45,600	\$ 114,000
1.3	Sheet Pile Wall	840	FT	3,778.81	6,046.09	5,290.33	\$ 3,174,199	\$ 5,078,718	\$ 4,443,878	\$ 12,696,795
1.4	Dewater	1	LS		225,000.00	150,000.00	\$ -	\$ 225,000	\$ 150,000	\$ 375,000
1.5	Excavate and Remove existing organic material	8,077	CY		300.00	200.00	\$ -	\$ 2,423,111	\$ 1,615,407	\$ 4,038,519
1.6	Backfill (import, compacted in place)	65,424	CY	77.50	46.50	31.00	\$ 5,070,360	\$ 3,042,216	\$ 2,028,144	\$ 10,140,720
1.7	18" concrete pile	1,392	EA	3,367.00	3,030.30	2,020.20	\$ 4,686,864	\$ 4,218,178	\$ 2,812,118	\$ 11,717,160
1.8	Concrete Slab (Pier)	4,846	CY	480.00	448.00	672.00	\$ 2,326,187	\$ 2,171,108	\$ 3,256,661	\$ 7,753,956
1.9	3.5' Sea wall	610	FT	175.50	163.80	245.70	\$ 107,055	\$ 99,918	\$ 149,877	\$ 356,850
1.10	Continuous concrete on bulkhead	0	FT	234.00	218.40	327.60	\$ -	\$ -	\$ -	\$ -
1.11	Outter fender system	0	LF	80.00	48.00	72.00	\$ -	\$ -	\$ -	\$ -
1.12										
1.13										
TOTAL - Marine Construction Civil							\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.10	345kV, Cable sealing end	\$ -	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	300	CY	703.89	804.44	502.78	\$ 211,166	\$ 241,332	\$ 150,833	\$ 603,330
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	554	CY	703.89	804.44	502.78	\$ 389,854	\$ 445,547	\$ 278,467	\$ 1,113,868
2.32	Precast Firewall for transformer, PARs, reactors	3,990	SF	25.00	15.00	10.00	\$ 99,750	\$ 59,850	\$ 39,900	\$ 199,500
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 700,769	\$ 746,729	\$ 469,199	\$ 1,916,698
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch-3 Ph	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		367,900.00	241,600.00	\$ -	\$ 367,900	\$ 241,600	\$ 609,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker	0	EA		57,239.00	24,531.00		\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA					\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA					\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00		\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00		\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50		\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75		\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 8,462,488	\$ 3,449,420	\$ 2,294,480	\$ 14,206,388
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	575	LF	266.50	53.04	13.26	\$ 153,238	\$ 30,498	\$ 7,625	\$ 191,360
6.7										
6.8	138kV UG- Conduit	0	LF	41.00	30.00	16.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	9,360.00	11,700.00		\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	52.00	47.00	29.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,000	LF	2.09	3.42	1.46	\$ 10,455	\$ 17,077	\$ 7,319	\$ 34,850
7.2	Caweld, DSA, 4/0 , T, CROSS	143	EA	165.00	75.00		\$ 23,595	\$ 10,725	\$ -	\$ 34,320
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	1,577,942.61	1,104,559.83	473,382.78	\$ 1,577,943	\$ 1,104,560	\$ 473,383	\$ 3,155,885
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	41,575.50	33,260.40	8,315.10	\$ 124,727	\$ 99,781	\$ 24,945	\$ 249,453
8.4	Backup Line Relays (87L): GE L90	3	EA	41,575.50	33,260.40	8,315.10	\$ 124,727	\$ 99,781	\$ 24,945	\$ 249,453
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.18	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,516,145	\$ 1,907,422	\$ 727,723	\$ 5,151,291
12. Farragut 345kV Substation Expansion							\$ 27,377,079	\$ 23,552,602	\$ 18,032,665	\$ 68,962,346
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,455,484.35	623,779.01	\$ -	\$ 1,455,484	\$ 623,779	\$ 2,079,263
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		587,023.46		\$ -	\$ 587,023	\$ -	\$ 587,023

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,348,093.84		\$ -	\$ 2,348,094	\$ -	\$ 2,348,094
9.4	Utility PM and Project Oversight	1	LS		587,023.46		\$ -	\$ 587,023	\$ -	\$ 587,023
9.5	Site Accommodation, Facilities, Storage	1	LS	587,023.46			\$ 587,023	\$ -	\$ -	\$ 587,023
	Engineering									
9.6	Design Engineering	1.00	LS		4,696,187.67		\$ -	\$ 4,696,188	\$ -	\$ 4,696,188
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		410,916.42		\$ -	\$ 410,916	\$ -	\$ 410,916
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,201,337.97		\$ -	\$ 2,201,338	\$ -	\$ 2,201,338
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		587,023.46		\$ -	\$ 587,023	\$ -	\$ 587,023
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		176,107.04		\$ -	\$ 176,107	\$ -	\$ 176,107
9.15	Laydown Lease	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,460,000	\$ -	\$ -	\$ 2,460,000	\$ 2,460,000
9.20	Sales Tax on Materials	8.80%	LS	27,377,078.85			\$ 2,409,183	\$ -	\$ -	\$ 2,409,183
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		68,962.35		\$ -	\$ 68,962	\$ -	\$ 68,962
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,996,206	\$ 13,131,810	\$ 3,092,879	\$ 19,220,895

NEXTera Energy- TO39 Core 4

13 - Northport 345/138kV AIS & 138KV GIS Substation

Total:

Total: \$ 98,823,883

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
13 - Northport 345/138kV AIS & 138KV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,397,996	\$ 1,110,321	\$ 635,009	\$ 3,143,325
2. SUBSTATION FOUNDATIONS	\$ 1,906,076	\$ 1,924,785	\$ 1,173,176	\$ 5,004,037
3. SUBSTATION STRUCTURES	\$ 190,975	\$ 109,615	\$ 73,077	\$ 373,667
4. MAJOR EQUIPMENT	\$ 23,681,938	\$ 6,693,277	\$ 4,293,523	\$ 34,668,738
5. LOW VOLTAGE & CONTROL CABLE	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH	\$ 3,507,324	\$ 1,775,983	\$ 885,857	\$ 6,169,163
7. GROUND GRID	\$ 267,816	\$ 193,605	\$ 45,270	\$ 506,690
8. CONTROL ENCLOSURE	\$ 2,808,956	\$ 2,333,642	\$ 931,722	\$ 6,074,320
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,399,464	\$ 8,853,148	\$ 2,893,532	\$ 15,146,144
Turnkey cost (HVDC, GIS)	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
Non-Turnkey cost	\$ 30,117,917	\$ 18,728,466	\$ 8,071,783	\$ 56,918,166
SUBTOTAL (Costs):	\$ 37,282,917	\$ 23,027,466	\$ 10,937,783	\$ 71,248,166
CONTRACTOR MARK-UP (OH&P)	\$ 5,851,125	\$ 3,629,064	\$ 1,624,881	\$ 11,105,070
SUBTOTAL:	\$ 43,134,042	\$ 26,656,529	\$ 12,562,664	\$ 82,353,236
CONTINGENCY ON ENTIRE PROJECT	\$ 8,626,808	\$ 5,331,306	\$ 2,512,533	\$ 16,470,647
TOTAL:	\$ 51,760,850	\$ 31,987,835	\$ 15,075,197	\$ 98,823,883

Description of Work: Construct a new Northport 138kV GIS substation adjacent to the existing Northport 138kV substation. Tie the existing Pilgrim-Northport 138kV lines, the new 345/138kV transformers, and the existing Northport 138kV substation into the 138kV breaker-and-a-half bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 - Northport 345/138kV AIS & 138KV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 84,000	\$ 56,000	\$ 140,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,489	SY	4.85	7.20	4.80	\$ 21,771	\$ 32,320	\$ 21,547	\$ 75,638
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$ -	\$ 158,107	\$ 67,760	\$ 225,867
1.5	Site Grading- Excavation for Substation Pad	19,360	CY		9.00	6.00	\$ -	\$ 174,240	\$ 116,160	\$ 290,400
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	10,454	CY		21.00	9.00	\$ -	\$ 219,542.40	\$ 94,089.60	\$ 313,632.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	15,682	CY		2.40	1.60	\$ -	\$ 37,636	\$ 25,091	\$ 62,726
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	10,454	CY	25.00	2.40	1.60	\$ 261,360	\$ 25,091	\$ 16,727	\$ 303,178
1.9	Install substation 8" pad base	9,680	SY	11.00	6.00	4.00	\$ 106,480	\$ 58,080	\$ 38,720	\$ 203,280
1.10	Site Surfacing - Aggregate 6" Thick	14,520	SY	16.50	4.50	3.00	\$ 239,580	\$ 65,340	\$ 43,560	\$ 348,480
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,992	LF	13.85	13.85	6.92	\$ 27,585	\$ 27,585	\$ 13,793	\$ 68,963
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	670,464.00	172,800.00	114,156.00	\$ 670,464	\$ 172,800	\$ 114,156	\$ 957,420
1.15	Seeding	16,800	SF	1.50	1.50	1.00	\$ 25,200	\$ 25,200	\$ 16,800	\$ 67,200
1.16	Erosion Control-Silt fence install & remove	3,287	LF	2.41	3.16	0.72	\$ 7,921	\$ 10,386	\$ 2,366	\$ 20,674
1.17	Temporary fencing	2,191	LF	7.50	5.25	2.25	\$ 16,434	\$ 11,504	\$ 4,930	\$ 32,868
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,397,996	\$ 1,110,321	\$ 635,009	\$ 3,143,325
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	\$ -	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.12	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.15	345/138KV, Single-Phase 560MVA Power Transformer with oil containenet	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.16	345kV, Shunt Reactor with oil containment-350MVAR	450	CY	703.89	804.44	502.78	\$ 316,748	\$ 361,998	\$ 226,249	\$ 904,995
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	262	CY	703.89	804.44	502.78	\$ 184,418	\$ 210,763	\$ 131,727	\$ 526,908
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, GIS Enclosure-BLDG	490	CY	703.89	804.44	502.78	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
2.25	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.30	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.31	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.32	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 1,906,076	\$ 1,924,785	\$ 1,173,176	\$ 5,004,037
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.11	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.12	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.15	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	2	EA							
3.19	138kV, Cable sealing end	2	EA	4,066.40	1,443.00	962.00	\$ 8,133	\$ 2,886	\$ 1,924	\$ 12,943
3.20	138kV, Surge arrester	6	EA	4,066.40	1,443.00	962.00	\$ 24,398	\$ 8,658	\$ 5,772	\$ 38,828
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 190,975	\$ 109,615	\$ 73,077	\$ 373,667
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.7	345/138KV, Single-Phase 560MVA Power Transformer with oil containenet	2	EA	5,220,000.00	3,520.00	880.00	\$ 10,440,000	\$ 7,040	\$ 1,760	\$ 10,448,800
4.8	Transport & Testing- Transformer	2	EA		771,400.00	510,600.00	\$ -	\$ 1,542,800	\$ 1,021,200	\$ 2,564,000
4.9	345kV, Shunt Reactor with oil containment-350MVAR	1	EA	4,310,025.00	3,520.00	880.00	\$ 4,310,025	\$ 3,520	\$ 880	\$ 4,314,425
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		374,020.00	247,880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		339,150.00	145,350.00	\$ -	\$ 339,150	\$ 145,350	\$ 484,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	345kV, Phase Angle Regulator	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	3	EA	6,669.00	5,460.00	2,340.00	\$ 20,007	\$ 16,380	\$ 7,020	\$ 43,407
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600
4.19	138kV, GIS indoor	15	EA	477,666.67	286,600.00	191,066.67	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
4.20	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.24	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 23,681,938	\$ 6,693,277	\$ 4,293,523	\$ 34,668,738
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	23,100	LF	5.30	1.43	0.29	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,650	LF	11.15	10.80	5.40	\$ 51,848	\$ 50,220	\$ 25,110	\$ 127,178
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,113	LF	266.50	53.04	13.26	\$ 296,481	\$ 59,007	\$ 14,752	\$ 370,240
6.8	138kV UG- Conduit	2,449	LF	266.73	202.15	100.00	\$ 653,224	\$ 495,057	\$ 244,912	\$ 1,393,193
6.9	138kV UG- Cable	7,714	LF	145.00	87.00	58.00	\$ 1,118,581	\$ 671,148	\$ 447,432	\$ 2,237,162
6.10	138kV UG- Termination	48	EA	27,805.00	9,846.48	2,813.28	\$ 1,334,640	\$ 472,631	\$ 135,037	\$ 1,942,308
6.13	Fiber Optic Cable	2,571	LF	7.40	3.33	2.22	\$ 19,021	\$ 8,564	\$ 5,710	\$ 33,295
6.14	Ground Continuity Conductor	2,571	LF	13.04	7.53	5.02	\$ 33,529	\$ 19,355	\$ 12,904	\$ 65,788
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,507,324	\$ 1,775,983	\$ 885,857	\$ 6,169,163
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	27,485	LF	2.09	3.42	1.46	\$ 57,471	\$ 93,870	\$ 40,230	\$ 191,570
7.2	Caweld, DSA, 4/0 , T, CROSS	725	EA	165.00	75.00		\$ 119,625	\$ 54,375	\$ -	\$ 174,000
7.3	Ground Rod, 3/4" x 15'	672	EA	135.00	67.50	7.50	\$ 90,720	\$ 45,360	\$ 5,040	\$ 141,120
TOTAL - GROUND GRID							\$ 267,816	\$ 193,605	\$ 45,270	\$ 506,690
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	1	EA	384,814.39	346,332.95	230,888.63	\$ 384,814	\$ 346,333	\$ 230,889	\$ 962,036
8.2	345kV, GIS Enclosure-BLDG	1	EA	878,048.71	614,634.10	263,414.61	\$ 878,049	\$ 614,634	\$ 263,415	\$ 1,756,097
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE I90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annuncia	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.15	Backup Line Relays (87L): GE I90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.16	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.17	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.18	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.19	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.20	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annuncia	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.21	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.22	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.23	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.24	Backup Line Relays (87L): GE I90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.25	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.26	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.27	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.28	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.29	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.30	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,808,956	\$ 2,333,642	\$ 931,722	\$ 6,074,320
13 - Northport 345/138kV AIS & 138KV GIS Substation							\$ 33,883,453	\$ 14,174,317	\$ 8,044,251	\$ 56,102,022
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		526,874.91	225,803.53	\$ -	\$ 526,875	\$ 225,804	\$ 752,678
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		417,720.22		\$ -	\$ 417,720	\$ -	\$ 417,720
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,670,880.87		\$ -	\$ 1,670,881	\$ -	\$ 1,670,881
9.4	Utility PM and Project Oversight	1	LS		417,720.22		\$ -	\$ 417,720	\$ -	\$ 417,720
9.5	Site Accommodation, Facilities, Storage	1	LS	417,720.22			\$ 417,720	\$ -	\$ -	\$ 417,720
	Engineering									
9.6	Design Engineering	1.00	LS		3,341,761.74		\$ -	\$ 3,341,762	\$ -	\$ 3,341,762
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		292,404.15		\$ -	\$ 292,404	\$ -	\$ 292,404
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,566,450.81		\$ -	\$ 1,566,451	\$ -	\$ 1,566,451
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		417,720.22		\$ -	\$ 417,720	\$ -	\$ 417,720
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		125,316.07		\$ -	\$ 125,316	\$ -	\$ 125,316
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	678,280.00	\$ -	\$ -	\$ 678,280	\$ 678,280
9.17	Legal Fees (Real estate)	1.00	LS		-	20,348.40	\$ -	\$ -	\$ 20,348	\$ 20,348
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,960,000	\$ -	\$ -	\$ 1,960,000	\$ 1,960,000
9.20	Sales Tax on Materials	8.80%	LS	33,883,452.91			\$ 2,981,744	\$ -	\$ -	\$ 2,981,744
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		56,102.02		\$ -	\$ 56,102	\$ -	\$ 56,102
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,399,464	\$ 8,853,148	\$ 2,893,532	\$ 15,146,144

NEXtera Energy- TO39 Core 4
14.Pilgrim 138kV Substation Upgrades

Total: \$ 2,036,018

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
14.Pilgrim 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
2. SUBSTATION FOUNDATIONS	\$ 34,758	\$ 39,723	\$ 24,827	\$ 99,308
3. SUBSTATION STRUCTURES	\$ 45,630	\$ 59,338	\$ 37,176	\$ 142,144
4. MAJOR EQUIPMENT	\$ 234,399	\$ 58,019	\$ 25,896	\$ 318,314
5. LOW VOLTAGE & CONTROL CABLE	\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
6. CONDUIT & CABLE TRENCH	\$ 76,660	\$ 22,980	\$ 8,175	\$ 107,815
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,002	\$ 233,261	\$ 51,117	\$ 347,380
SUBTOTAL (Costs):	\$ 655,016	\$ 583,463	\$ 199,387	\$ 1,437,866
CONTRACTOR MARK-UP (OH&P)	\$ 117,903	\$ 105,023	\$ 35,890	\$ 258,816
SUBTOTAL:	\$ 772,919	\$ 688,486	\$ 235,277	\$ 1,696,682
CONTINGENCY ON ENTIRE PROJECT	\$ 154,584	\$ 137,697	\$ 47,055	\$ 339,336
TOTAL:	\$ 927,503	\$ 826,183	\$ 282,333	\$ 2,036,018

Description of Work: Add 1 terminal to Pilgrim 138kV substation to accommodate the new transmission line										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS		24,000.00	16,000.00	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting	0	EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7" Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 24,000	\$ 16,000	\$ 40,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	6	CY	703.89	804.44	502.78	\$ 4,266	\$ 4,875	\$ 3,047	\$ 12,187
2.28	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 34,758	\$ 39,723	\$ 24,827	\$ 99,308
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.18	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	150	LF	25.00	184.94	123.29	\$ 3,750	\$ 27,741	\$ 18,494	\$ 49,985
3.22	AL Bus fittings	1	LS	4,500.00	4,500.00	2,250.00	\$ 4,500	\$ 4,500	\$ 2,250	\$ 11,250
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,630	\$ 59,338	\$ 37,176	\$ 142,144
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA				\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 234,399	\$ 58,019	\$ 25,896	\$ 318,314
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	5,100	LF	5.30	1.43	0.29	\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	900	LF	11.15	10.80	5.40	\$ 10,035	\$ 9,720	\$ 4,860	\$ 24,615
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 76,660	\$ 22,980	\$ 8,175	\$ 107,815
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
10.Shore Road 138kV Substation Upgrades							\$ 592,014	\$ 350,201	\$ 148,270	\$ 1,090,486
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,446.51	7,477.08	\$ -	\$ 17,447	\$ 7,477	\$ 24,924
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,619.43		\$ -	\$ 43,619	\$ -	\$ 43,619
9.4	Utility PM and Project Oversight	1	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.5	Site Accommodation, Facilities, Storage	1	LS	10,904.86			\$ 10,905	\$ -	\$ -	\$ 10,905
	Engineering									
9.6	Design Engineering	1.00	LS		87,238.86		\$ -	\$ 87,239	\$ -	\$ 87,239
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		7,633.40		\$ -	\$ 1,527	\$ -	\$ 1,527
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,893.21		\$ -	\$ 40,893	\$ -	\$ 40,893
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,271.46		\$ -	\$ 3,271	\$ -	\$ 3,271
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	592,014.04			\$ 52,097	\$ -	\$ -	\$ 52,097
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,090.49		\$ -	\$ 1,090	\$ -	\$ 1,090
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,002	\$ 233,261	\$ 51,117	\$ 347,380

NEXTera Energy- TO39 Core 4

15. Existing Ruland Road 138 kV Substation Upgrades

Total: \$ 2,030,035

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
15. Existing Ruland Road 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at existitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
15. Existing Ruland Road 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7" Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings		LS	22,500.00	22,500.00	11,250.00	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.2	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.4	345/138KV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.5	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.13	Fiber Optic Cable	0	LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.14	Ground Continuity Conductor	0	LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	0	EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.21	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
15. Existing Ruland Road 138 kV Substation Upgrades							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXTera Energy- TO39 Core 4

16.Existing East Garden City 138 kV Substation Upgrades

Total: \$ 28,298,464

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
16.Existing East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at exisitng 138kv EGC station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16.Existing East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.20	AL. Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.21	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0.00	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		272,900.20	178,266.80	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator with oil containment	0	EA	25,764,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- PARs	0	EA		1,215,400.00	806,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
6.16										
6.17							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.22	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.23	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.24	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.25	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
16.Existing East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversite	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
	Engineering									
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

NEXtera Energy- TO39 Core 4

Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit

Total: \$ 188,625,656

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY	\$ -	\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ 260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 7	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR /GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

NEXtera Energy- TO39 Core 4

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits

Total: \$ 346,473,248

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632
SUBTOTAL (Costs):	\$ 92,520,355	\$ 99,703,098	\$ 52,461,045	\$ 244,684,497
CONTRACTOR MARK-UP (OH&P)	\$ 16,653,664	\$ 17,946,558	\$ 9,442,988	\$ 44,043,210
SUBTOTAL:	\$ 109,174,018	\$ 117,649,655	\$ 61,904,033	\$ 288,727,707
CONTINGENCY ON ENTIRE PROJECT	\$ 21,834,804	\$ 23,529,931	\$ 12,380,807	\$ 57,745,541
TOTAL:	\$ 131,008,822	\$ 141,179,587	\$ 74,284,840	\$ 346,473,248

Description of Work: Dunwoodie - New Rochelle Landing (double circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	520	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 832,000	\$ 2,496,000	\$ 832,000	\$ 4,160,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	20,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,496,000	\$ 561,600	\$ 3,057,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-SP -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	8.47	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	357,773	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 715,546	\$ 536,659	\$ 178,886	\$ 1,431,091
2.3	Trench Excavation	33,790	CY		\$ 17.5	\$ 7.5	\$ -	\$ 591,319	\$ 253,422	\$ 844,741
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,520	CY	\$ 50	\$ 25	\$ 14	\$ 175,988	\$ 86,234	\$ 49,277	\$ 311,498
2.5	Supply & Install Thermal Backfill -conduit level	29,566	CY	\$ 350	\$ 245	\$ 105	\$ 10,348,081	\$ 7,243,657	\$ 3,104,424	\$ 20,696,163
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,774	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,754,851	\$ 1,721,782	\$ 688,713	\$ 5,165,345
2.8	Conduit 8" SCH 40PVC	357,773	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 10,232,302	\$ 2,028,572	\$ 869,388	\$ 13,130,262
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	178,886	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 629,680	\$ 563,492	\$ 241,497	\$ 1,434,669
2.11	Warning Tape	44,722	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,708	\$ 11,180	\$ 4,472	\$ 22,361
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	5,984	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,720	\$ 44,880	\$ 149,600
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000
2.15	Splice Vault Backfill	1,795	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,133	\$ 10,771	\$ 35,904
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	\$ -	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	536,659	LF			\$ 0.25	\$ -	\$ -	\$ 134,165	\$ 134,165
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	28,581	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 400,133	\$ 400,133	\$ 200,067	\$ 1,000,333
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,939	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 177,678	\$ 186,562	\$ 79,955	\$ 444,195
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	138	EA		\$ 400	\$ 1,200	\$ -	\$ 55,097	\$ 165,291	\$ 220,388

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	138	EA		\$ 10	\$ 15	\$ -	\$ 1,377	\$ 2,066	\$ 3,444
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	296	EA		\$ 400	\$ 1,200	\$ -	\$ 118,264	\$ 354,791	\$ 473,055
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 462,462	\$ 308,308	\$ -	\$ 462,462	\$ 308,308	\$ 770,770
2.24	Excess Materials Disposal to Certified Backfill	49,372	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,209,614	\$ 518,406	\$ 1,728,020
2.25	Rock Excavation and Removal	26,516	CY		\$ 243	\$ 162	\$ -	\$ 6,443,332	\$ 4,295,555	\$ 10,738,886
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,774	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,774	\$ 19,887	\$ 59,660
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	93,915	FT	\$ 7	\$ 3	\$ 2	\$ 694,692	\$ 312,794	\$ 208,530	\$ 1,216,016
3.12	Ground Continuity Conductor	93,915	FT	\$ 13	\$ 8	\$ 5	\$ 1,224,562	\$ 706,901	\$ 471,267	\$ 2,402,731
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345							\$ 83,180,792	\$ 70,079,524	\$ 42,050,550	\$ 195,310,866
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,363,902	\$ 2,242,601	\$ -	\$ 3,363,902	\$ 2,242,601	\$ 5,606,504
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		7,812,434.62		\$ -	\$ 7,812,435	\$ -	\$ 7,812,435
4.4	Utility PM and Project Oversight	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.5	Site Accommodation, Facilities, Storage	1	LS	1,953,108.66			\$ 1,953,109	\$ -	\$ -	\$ 1,953,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,765,543	\$ -	\$ -	\$ 9,765,543	\$ -	\$ 9,765,543
4.7	LIDAR /GPR	1.0	LS		\$ 351,560	\$ 234,373	\$ -	\$ 351,560	\$ 234,373	\$ 585,933
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 820,306	\$ 546,870	\$ -	\$ 820,306	\$ 546,870	\$ 1,367,176
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,953,109		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 585,933		\$ -	\$ 585,933	\$ -	\$ 585,933
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 247,533	\$ -	\$ -	\$ 247,533	\$ 247,533
4.16	Legal Fees (Real estate)	1.00	LS		-	7,425.99	\$ -	\$ -	\$ 7,426	\$ 7,426
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,920,000	\$ -	\$ -	\$ 6,920,000	\$ 6,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 83,180,791.58			\$ 7,386,454	\$ -	\$ -	\$ 7,386,454
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 195,311	\$ -	\$ -	\$ 195,311	\$ 195,311
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632

NEXtera Energy- TO39 Core 4

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each)

Total: \$524,998,762

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-Spra				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$116,979,561	\$104,729,644	\$71,163,184	\$292,872,389
2. TRANSITION STATION	\$920,987	\$1,160,115	\$1,105,523	\$3,186,625
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$13,335,838	\$46,001,031	\$15,365,954	\$74,702,824
SUBTOTAL (Costs):	\$131,236,386	\$151,890,790	\$87,634,662	\$370,761,837
CONTRACTOR MARK-UP (OH&P)	\$23,622,549	\$27,340,342	\$15,774,239	\$66,737,131
SUBTOTAL:	\$154,858,935	\$179,231,132	\$103,408,901	\$437,498,968
CONTINGENCY ON ENTIRE PROJECT	\$30,971,787	\$35,846,226	\$20,681,780	\$87,499,794
TOTAL:	\$185,830,722	\$215,077,358	\$124,090,681	\$524,998,762

Description of Work: New Rochelle landing - Hempstead Harbor Landing. Part of any Dunwoodie to Shore/Ruland/EGC 345 kV project segment (Include HDD's to get onshore at both ends of route) 1600 mm2 Tri-Core										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	200,260	FT	\$537	\$400	\$250	\$107,539,534	\$80,103,936	\$50,064,960	\$237,708,430
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$10,135,879	\$6,757,252	\$-	\$10,135,879	\$6,757,252	\$16,893,131
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$-	\$-	\$-	\$-
1.4	Cable Transition Splice	8	EA	\$27,911	\$37,214	\$27,911	\$223,286	\$297,715	\$223,286	\$744,286
1.5	Outdoor Termination	8	EA	\$27,911	\$37,214	\$27,911	\$223,286	\$297,715	\$223,286	\$744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$-	\$-	\$-	\$-
1.7	Fiber Optic Cable	100,130	FT	\$7			\$740,661	\$-	\$-	\$740,661
1.8	Ground Continuity Conductor	100,130	FT	\$13			\$1,305,594	\$-	\$-	\$1,305,594
1.9							\$-	\$-	\$-	\$-
1.10	Jack and Bore along Route	0	LF	\$1,600	\$3,200	\$3,200	\$-	\$-	\$-	\$-
1.11	HDD along Route	4,342	LF	\$1,600	\$3,200	\$3,200	\$6,947,200	\$13,894,400	\$13,894,400	\$34,736,000
TOTAL - Submarine cable:							\$116,979,561	\$104,729,644	\$71,163,184	\$292,872,389
2. TRANSITION STATION										
2.1	Site Clearing	1.0	ACRE	-	10,800.00	7,200.00	\$-	\$10,800	\$7,200	\$18,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$-	\$-	\$-	\$-
2.3	Strip and Dispose Top Soil	1,613	CY		24.50	10.50	\$-	\$39,527	\$16,940	\$56,467
2.4	Site Grading- Excavation for Substation Pad	4,840	CY		9.00	6.00	\$-	\$43,560	\$29,040	\$72,600
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,614	CY		21.00	9.00	\$-	\$54,885.60	\$23,522.40	\$78,408.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,920	CY		2.40	1.60	\$-	\$9,409	\$6,273	\$15,682
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	2,614	CY	25.00	2.40	1.60	\$65,340	\$6,273	\$4,182	\$75,794
2.8	Install substation 8" pad base	4,840	SY	11.00	6.00	4.00	\$53,240	\$29,040	\$19,360	\$101,640
2.9	Site Surfacing - Aggregate 6" Thick	4,840	SY	16.50	4.50	3.00	\$79,860	\$21,780	\$14,520	\$116,160
2.10	7' Station Fence w/ Barbed Wire & Grounding	900	LF	13.85	13.85	6.92	\$12,463	\$12,463	\$6,232	\$31,158
2.11	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$16,200	\$6,490	\$2,610	\$25,300
2.12	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$5,000	\$2,000	\$700	\$7,700
2.13	Erosion Control-Silt fence install & remove	1,500	LF	2.41	3.16	0.72	\$3,615	\$4,740	\$1,080	\$9,435
2.14	Temporary fencing	1,000	LF	7.50	5.25	2.25	\$7,500	\$5,250	\$2,250	\$15,000
2.15	345kV, Cable sealing end - 3 Ph	64	CY	703.89	804.44	502.78	\$45,189	\$51,645	\$32,278	\$129,113
2.16	345kV, lighting arrester	64	CY	703.89	804.44	502.78	\$45,189	\$51,645	\$32,278	\$129,113
2.17	345kV, Cable sealing end - 3 Ph	12	EA	8,346.00	5,758.74	3,839.16	\$100,152	\$69,105	\$46,070	\$215,327
2.18	345kV, lighting arrester	\$12	EA	4,810.00	2,886.00	1,924.00	\$57,720	\$34,632	\$23,088	\$115,440
2.19	AL. Bus Tubing, 5" SCH 80	420	LF	25.00	184.94	123.29	\$10,500	\$77,674	\$51,783	\$139,957
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$12,600	\$12,600	\$6,300	\$31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	267	LF	2.09	-	-	\$558	\$-	\$-	\$558
2.22	Caweld, DSA, 4/0 , T, CROSS	133	EA	165.00	75.00		\$22,000	\$10,000	\$-	\$32,000
2.23	Ground Rod, 3/4" x 15'	36	EA	135.00	67.50	7.50	\$4,860	\$2,430	\$270	\$7,560
2.24	Trench Box Shoring (Vault)	8	EA	\$-	\$18,079	\$27,119	\$-	\$144,633	\$216,949	\$361,582
2.25	Splice Vault Excavation	5,177	CY		\$17.5	\$7.5	\$-	\$90,596	\$38,827	\$129,422
2.26	Splice Vault Supply & Installation	8	EA	\$45,500	\$21,450	\$50,050	\$364,000	\$171,600	\$400,400	\$936,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.27	Splice Vault Backfill	1,553	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,743	\$ 9,318	\$ 31,061
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	4,711	CY		\$ 24.5	\$ 10.5	\$ -	\$ 115,419	\$ 49,465	\$ 164,884
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	5,177	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,177	\$ 2,588	\$ 7,765
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 920,987	\$ 1,160,115	\$ 1,105,523	\$ 3,186,625
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 117,900,548	\$ 105,889,759	\$ 72,268,707	\$ 296,059,014
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		11,842,360.55		\$ -	\$ 11,842,361	\$ -	\$ 11,842,361
3.4	Utility PM and Project Oversight	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.5	Site Accommodation, Facilities, Storage	1	LS	2,960,590.14			\$ 2,960,590	\$ -	\$ -	\$ 2,960,590
	Engineering									
3.6	Design Engineering	1	LS		\$ 14,802,951		\$ -	\$ 14,802,951	\$ -	\$ 14,802,951
3.7	Surveying/Staking	1	LS		\$ 2,072,413		\$ -	\$ 2,072,413	\$ -	\$ 2,072,413
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,960,590		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 888,177		\$ -	\$ 888,177	\$ -	\$ 888,177
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 842,480	\$ -	\$ -	\$ 842,480	\$ 842,480
3.15	Legal Fees (Real estate)	1.00	LS		-	25,274.40	\$ -	\$ -	\$ 25,274	\$ 25,274
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 117,900,548			\$ 10,375,248	\$ -	\$ -	\$ 10,375,248
3.21	Contractor Permits	1	LS		\$ 296,059		\$ -	\$ 296,059	\$ -	\$ 296,059
3.22	Payment & Performance Bond	1	LS			\$ 10,480,000	\$ -	\$ -	\$ 10,480,000	\$ 10,480,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,335,838	\$ 46,001,031	\$ 15,365,954	\$ 74,702,824

NEXtera Energy- TO39 Core 4

Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit

Total: \$ 700,936,401

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 165,374,873	\$ 140,494,560	\$ 91,110,953	\$ 396,980,386
2. TRANSITION STATION	\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 18,573,591	\$ 59,407,213	\$ 18,634,495	\$ 96,615,299
SUBTOTAL (Costs):	\$ 184,364,814	\$ 200,466,013	\$ 110,180,755	\$ 495,011,582
CONTRACTOR MARK-UP (OH&P)	\$ 33,185,667	\$ 36,083,882	\$ 19,832,536	\$ 89,102,085
SUBTOTAL:	\$ 217,550,481	\$ 236,549,896	\$ 130,013,291	\$ 584,113,667
CONTINGENCY ON ENTIRE PROJECT	\$ 43,510,096	\$ 47,309,979	\$ 26,002,658	\$ 116,822,733
TOTAL:	\$ 261,060,577	\$ 283,859,875	\$ 156,015,949	\$ 700,936,401

Description of Work: Part of any Dunwoodie to Northport 345 kV project segment (Include HDD's to get onshore at both ends of route)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	295,046	FT	\$ 537	\$ 400	\$ 250	\$ 158,439,917	\$ 118,018,560	\$ 73,761,600	\$ 350,220,077
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 14,933,371	\$ 9,955,581	\$ -	\$ 14,933,371	\$ 9,955,581	\$ 24,888,952
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.5	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	147,523	FT	\$ 7			\$ 1,091,229	\$ -	\$ -	\$ 1,091,229
1.8	Ground Continuity Conductor	147,523	FT	\$ 13			\$ 1,923,555	\$ -	\$ -	\$ 1,923,555
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	4,342	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 3,473,600	\$ 6,947,200	\$ 6,947,200	\$ 17,368,000
TOTAL - Submarine cable:							\$ 165,374,873	\$ 140,494,560	\$ 91,110,953	\$ 396,980,386
2. TRANSITION STATION										
2.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 5,400	\$ 3,600	\$ 9,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	807	CY		24.50	10.50	\$ -	\$ 19,763	\$ 8,470	\$ 28,233
2.4	Site Grading- Excavation for Substation Pad	2,420	CY		9.00	6.00	\$ -	\$ 21,780	\$ 14,520	\$ 36,300
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,307	CY		21.00	9.00	\$ -	\$ 27,442.80	\$ 11,761.20	\$ 39,204.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,960	CY		2.40	1.60	\$ -	\$ 4,704	\$ 3,136	\$ 7,841
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	1,307	CY	25.00	2.40	1.60	\$ 32,670	\$ 3,136	\$ 2,091	\$ 37,897
2.8	Install substation 8" pad base	2,420	SY	11.00	6.00	4.00	\$ 26,620	\$ 14,520	\$ 9,680	\$ 50,820
2.9	Site Surfacing - Aggregate 6" Thick	2,420	SY	16.50	4.50	3.00	\$ 39,930	\$ 10,890	\$ 7,260	\$ 58,080
2.10	7' Station Fence w/ Barbed Wire & Grounding	450	LF	13.85	13.85	6.92	\$ 6,232	\$ 6,232	\$ 3,116	\$ 15,579
2.11	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
2.12	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
2.13	Erosion Control-Silt fence install & remove	750	LF	2.41	3.16	0.72	\$ 1,808	\$ 2,370	\$ 540	\$ 4,718
2.14	Temporary fencing	500	LF	7.50	5.25	2.25	\$ 3,750	\$ 2,625	\$ 1,125	\$ 7,500
2.15	345kV, Cable sealing end - 3 Ph	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.16	345kV, lighting arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.17	345kV, Cable sealing end - 3 Ph	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
2.18	345kV, lighting arrester	\$ 6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
2.19	AL. Bus Tubing, 5" SCH 80	630	LF	25.00	184.94	123.29	\$ 15,750	\$ 116,511	\$ 77,674	\$ 209,935
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	-	-	\$ 836	\$ -	\$ -	\$ 836
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000
2.23	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,430	\$ 1,215	\$ 135	\$ 3,780
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	1,294	CY		\$ 17.5	\$ 7.5	\$ -	\$ 22,649	\$ 9,707	\$ 32,356
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	388	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,436	\$ 2,330	\$ 7,765

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	1,178	CY		\$ 24.5	\$ 10.5	\$ -	\$ 28,855	\$ 12,366	\$ 41,221
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	1,294	CF		\$ 1.0	\$ 0.5	\$ -	\$ 1,294	\$ 647	\$ 1,941
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 165,791,224	\$ 141,058,800	\$ 91,546,260	\$ 398,396,284
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,983,962.84		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		15,935,851.34		\$ -	\$ 15,935,851	\$ -	\$ 15,935,851
3.4	Utility PM and Project Oversight	1	LS		3,983,962.84		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.5	Site Accommodation, Facilities, Storage	1	LS	3,983,962.84			\$ 3,983,963	\$ -	\$ -	\$ 3,983,963
	Engineering									
3.6	Design Engineering	1	LS		\$ 19,919,814		\$ -	\$ 19,919,814	\$ -	\$ 19,919,814
3.7	Surveying/Staking	1	LS		\$ 2,788,774		\$ -	\$ 2,788,774	\$ -	\$ 2,788,774
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,983,963		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 1,195,189		\$ -	\$ 1,195,189	\$ -	\$ 1,195,189
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000	\$ 500,000	\$ -	\$ 500,000	\$ 500,000	\$ 1,000,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 112,908	\$ -	\$ -	\$ 112,908	\$ 112,908
3.15	Legal Fees (Real estate)	1.00	LS		-	3,387.24	\$ -	\$ -	\$ 3,387	\$ 3,387
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 165,791,224			\$ 14,589,628	\$ -	\$ -	\$ 14,589,628
3.21	Contractor Permits	1	LS		\$ 398,396		\$ -	\$ 398,396	\$ -	\$ 398,396
3.22	Payment & Performance Bond	1	LS			\$ 14,000,000	\$ -	\$ -	\$ 14,000,000	\$ 14,000,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 18,573,591	\$ 59,407,213	\$ 18,634,495	\$ 96,615,299

NEXtera Energy- TO39 Core 4
Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit

Total: \$ 210,271,720

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,537,664	\$ 12,454,558	\$ 4,987,906	\$ 19,980,128
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618
SUBTOTAL (Costs):	\$ 55,280,235	\$ 62,197,429	\$ 31,019,314	\$ 148,496,978
CONTRACTOR MARK-UP (OH&P)	\$ 9,950,442	\$ 11,195,537	\$ 5,583,476	\$ 26,729,456
SUBTOTAL:	\$ 65,230,678	\$ 73,392,966	\$ 36,602,790	\$ 175,226,434
CONTINGENCY ON ENTIRE PROJECT	\$ 13,046,136	\$ 14,678,593	\$ 7,320,558	\$ 35,045,286.73
TOTAL:	\$ 78,276,813	\$ 88,071,559	\$ 43,923,348	\$ 210,271,720

Description of Work: East Garden City - Hempstead Harbor Landing (Shore Road, single circuits). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,147,000	\$ 3,063,000	\$ 10,210,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	53,909	LF	\$ 30	\$ 18	\$ 12	\$ 1,617,264	\$ 970,358	\$ 646,906	\$ 3,234,528
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	10.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 408,400	\$ 1,225,200	\$ 408,400	\$ 2,042,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,537,664	\$ 12,454,558	\$ 4,987,906	\$ 19,980,128
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.21	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,427,358	\$ 951,572	\$ 2,378,930
2.2	Formwork in Trench	351,053	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 702,106	\$ 526,579	\$ 175,526	\$ 1,404,211
2.3	Trench Excavation	29,254	CY		\$ 17.5	\$ 7.5	\$ -	\$ 511,952	\$ 219,408	\$ 731,360
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,828	SF	\$ 50	\$ 25	\$ 14	\$ 91,420	\$ 44,796	\$ 25,598	\$ 161,813
2.5	Supply & Install Thermal Backfill	15,359	CY	\$ 350	\$ 245	\$ 105	\$ 5,375,496	\$ 3,762,847	\$ 1,612,649	\$ 10,750,992
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,150	CY	\$ 200	\$ 125	\$ 50	\$ 1,430,053	\$ 893,783	\$ 357,513	\$ 2,681,349
2.9	Conduit 8" SCH 40PVC	215,635	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 6,167,167	\$ 1,222,652	\$ 523,994	\$ 7,913,812
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	107,818	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 379,518	\$ 339,625	\$ 145,554	\$ 864,697
2.12	Warning Tape	107,818	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 16,173	\$ 26,954	\$ 10,782	\$ 53,909
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	4,987	CY		\$ 17.5	\$ 7.5	\$ -	\$ 87,267	\$ 37,400	\$ 124,667
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	1,496	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,944	\$ 8,976	\$ 29,920
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	323,453	LF			\$ 0.25	\$ -	\$ -	\$ 80,863	\$ 80,863
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,093	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 239,299	\$ 239,299	\$ 119,650	\$ 598,248
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 106,260	\$ 111,573	\$ 47,817	\$ 265,655

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	72	EA		\$ 400	\$ 1,200	\$ -	\$ 28,601	\$ 85,803	\$ 114,404
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	72	EA		\$ 10	\$ 15	\$ -	\$ 715	\$ 1,073	\$ 1,788
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,434	\$ 184,303	\$ 245,737
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	42,569	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,042,930	\$ 446,970	\$ 1,489,901
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	34,241	CF		\$ 1.0	\$ 0.5	\$ -	\$ 34,241	\$ 17,121	\$ 51,362
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	56,604	FT	\$ 7	\$ 3	\$ 2	\$ 418,702	\$ 188,526	\$ 125,684	\$ 732,912
3.12	Ground Continuity Conductor	56,604	FT	\$ 13	\$ 8	\$ 5	\$ 738,063	\$ 426,060	\$ 284,040	\$ 1,448,163
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 49,688,907	\$ 43,412,704	\$ 24,793,749	\$ 117,895,360
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,046,194	\$ 1,364,129	\$ -	\$ 2,046,194	\$ 1,364,129	\$ 3,410,323
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.3	Construction Project Management / Supervision	1	LS		4,715,814.38		\$ -	\$ 4,715,814	\$ -	\$ 4,715,814
4.4	Utility PM and Project Oversight	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.5	Site Accommodation, Facilities, Storage	1	LS	1,178,953.60			\$ 1,178,954	\$ -	\$ -	\$ 1,178,954
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,894,768	\$ -	\$ -	\$ 5,894,768	\$ -	\$ 5,894,768
4.7	LiDAR /GPR	1.0	LS		\$ 212,212	\$ 141,474	\$ -	\$ 212,212	\$ 141,474	\$ 353,686
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 495,161	\$ 330,107	\$ -	\$ 495,161	\$ 330,107	\$ 825,268
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,178,954		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 353,686		\$ -	\$ 353,686	\$ -	\$ 353,686
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 50,426	\$ -	\$ -	\$ 50,426	\$ 50,426
4.16	Legal Fees (Real estate)	1.00	LS		-	1,512.78	\$ -	\$ -	\$ 1,513	\$ 1,513
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,200,000	\$ -	\$ -	\$ 4,200,000	\$ 4,200,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 49,688,906.93			\$ 4,412,375	\$ -	\$ -	\$ 4,412,375
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 117,895	\$ -	\$ -	\$ 117,895	\$ 117,895
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618

NEXtera Energy- TO39 Core 4

Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit

Total: \$ 349,868,481

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274
SUBTOTAL (Costs):	\$ 90,427,881	\$ 103,561,178	\$ 53,093,201	\$ 247,082,261
CONTRACTOR MARK-UP (OH&P)	\$ 16,277,019	\$ 18,641,012	\$ 9,556,776	\$ 44,474,807
SUBTOTAL:	\$ 106,704,900	\$ 122,202,190	\$ 62,649,977	\$ 291,557,067
CONTINGENCY ON ENTIRE PROJECT	\$ 21,340,980	\$ 24,440,438	\$ 12,529,995	\$ 58,311,413
TOTAL:	\$ 128,045,880	\$ 146,642,628	\$ 75,179,973	\$ 349,868,481

Description of Work: Ruland - Hempstead Harbor Landing (Shore Road, single circuit). 5000 kcmil copper XLPE, single cable per phase..										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	15.89	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 11,120,200	\$ 4,765,800	\$ 15,886,000
1.3	Flaggers	500	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 800,000	\$ 2,400,000	\$ 800,000	\$ 4,000,000
1.4	K Rail / Lane Control / Metal Plates	83,878	LF	\$ 30	\$ 18	\$ 12	\$ 2,516,342	\$ 1,509,805	\$ 1,006,537	\$ 5,032,685
1.5	Police Support	20,000.0	HR		\$ 120	\$ 27	\$ -	\$ 2,400,000	\$ 540,000	\$ 2,940,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	15.89	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 635,440	\$ 1,906,320	\$ 635,440	\$ 3,177,200
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	15.89	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,220,863	\$ 1,480,575	\$ 3,701,438
2.2	Formwork in Trench	643,225	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,286,449	\$ 964,837	\$ 321,612	\$ 2,572,899
2.3	Trench Excavation	53,602	CY		\$ 17.5	\$ 7.5	\$ -	\$ 938,036	\$ 402,015	\$ 1,340,051
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,350	SF	\$ 50	\$ 25	\$ 14	\$ 167,506	\$ 82,078	\$ 46,902	\$ 296,486
2.5	Supply & Install Thermal Backfill	28,141	CY	\$ 350	\$ 245	\$ 105	\$ 9,849,377	\$ 6,894,564	\$ 2,954,813	\$ 19,698,755
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,101	CY	\$ 200	\$ 125	\$ 50	\$ 2,620,247	\$ 1,637,654	\$ 655,062	\$ 4,912,963
2.9	Conduit 8" SCH 40PVC	335,512	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 9,595,652	\$ 1,902,355	\$ 815,295	\$ 12,313,302
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	167,756	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 590,502	\$ 528,432	\$ 226,471	\$ 1,345,404
2.12	Warning Tape	167,756	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 25,163	\$ 41,939	\$ 16,776	\$ 83,878
2.13	Trench Box Shoring (Vault)	49	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 885,876	\$ 1,328,814	\$ 2,214,689
2.14	Splice Vault Excavation	8,145	CY		\$ 17.5	\$ 7.5	\$ -	\$ 142,536	\$ 61,087	\$ 203,622
2.15	Splice Vault Supply & Installation	49	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,715,000	\$ 808,500	\$ 1,886,500	\$ 4,410,000
2.16	Splice Vault Backfill	2,443	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,209	\$ 14,661	\$ 48,869
2.17	Jack and Bore along Route	805	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 644,000	\$ 1,288,000	\$ 1,288,000	\$ 3,220,000
2.18	HDD along Route	1,200	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 960,000	\$ 1,920,000	\$ 1,920,000	\$ 4,800,000
2.19	Air Test Ducts	\$ 503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LiDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 43,680	\$ 29,120	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXtera Energy- TO39 Core 4

Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits

Total: \$ 133,317,472

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576
SUBTOTAL (Costs):	\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757
CONTRACTOR MARK-UP (OH&P)	\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136
SUBTOTAL:	\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893
CONTINGENCY ON ENTIRE PROJECT	\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579
TOTAL:	\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472

Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ -	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversight	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LiDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXTera Energy- TO39 Core 4

Comp 10A - East Graden City To Valley Stream 345kv Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Graden City To Valley Stream 345kv Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,216
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Graden City To Valley Stream 345kv Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ 751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	\$ -	\$ 1,492	\$ 2,239	\$ 3,731

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LiDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

NEXTera Energy- TO39 Core 4

Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit

Total: \$ 165,653,108

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365
SUBTOTAL (Costs):	\$ 42,682,442	\$ 49,673,108	\$ 24,631,109	\$ 116,986,658
CONTRACTOR MARK-UP (OH&P)	\$ 7,682,840	\$ 8,941,159	\$ 4,433,600	\$ 21,057,599
SUBTOTAL:	\$ 50,365,281	\$ 58,614,267	\$ 29,064,708	\$ 138,044,257
CONTINGENCY ON ENTIRE PROJECT	\$ 10,073,056	\$ 11,722,853	\$ 5,812,942	\$ 27,608,851
TOTAL:	\$ 60,438,338	\$ 70,337,121	\$ 34,877,650	\$ 165,653,108

Description of Work: Ruland - 138kV (399/567/900 MVA) 5000 kcmil copper XLPE, single cable per phase (8.34 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.34	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,838,000	\$ 2,502,000	\$ 8,340,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,035	LF	\$ 30	\$ 18	\$ 12	\$ 1,321,056	\$ 792,634	\$ 528,422	\$ 2,642,112
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.34	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 333,600	\$ 1,000,800	\$ 333,600	\$ 1,668,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.34	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,165,932	\$ 777,288	\$ 1,943,220
2.2	Formwork in Trench	346,914	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 693,827	\$ 520,370	\$ 173,457	\$ 1,387,654
2.3	Trench Excavation	28,909	CY		\$ 17.5	\$ 7.5	\$ -	\$ 505,916	\$ 216,821	\$ 722,737
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,807	SF	\$ 50	\$ 25	\$ 14	\$ 90,342	\$ 44,268	\$ 25,296	\$ 159,905
2.5	Supply & Install Thermal Backfill	15,177	CY	\$ 350	\$ 245	\$ 105	\$ 5,312,115	\$ 3,718,480	\$ 1,593,634	\$ 10,624,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,066	CY	\$ 200	\$ 125	\$ 50	\$ 1,413,191	\$ 883,244	\$ 353,298	\$ 2,649,733
2.9	Conduit 8" SCH 40PVC	176,141	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 5,037,627	\$ 998,718	\$ 428,022	\$ 6,464,367
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	88,070	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 310,008	\$ 277,422	\$ 118,895	\$ 706,325
2.12	Warning Tape	88,070	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,211	\$ 22,018	\$ 8,807	\$ 44,035
2.13	Trench Box Shoring (Vault)	24	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 433,898	\$ 650,847	\$ 1,084,746
2.14	Splice Vault Excavation	3,285	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,493	\$ 24,640	\$ 82,133
2.15	Splice Vault Supply & Installation	24	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 840,000	\$ 396,000	\$ 924,000	\$ 2,160,000
2.16	Splice Vault Backfill	986	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,798	\$ 5,914	\$ 19,712
2.17	Jack and Bore along Route	95	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 76,000	\$ 152,000	\$ 152,000	\$ 380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ 264,211	LF			\$ 0.25	\$ -	\$ -	\$ 66,053	\$ 66,053
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,481	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 230,729	\$ 230,729	\$ 115,364	\$ 576,822
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,578	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 102,577	\$ 46,105	\$ 256,136	\$ 256,136
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,264	\$ 84,791	\$ 113,055
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	71	EA		\$ 10	\$ 15	\$ -	\$ 707	\$ 1,060	\$ 1,766

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,710	\$ 182,130	\$ 242,840
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	40,572	CY		\$ 24.5	\$ 10.5	\$ -	\$ 994,013	\$ 426,006	\$ 1,420,019
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	24	EA			\$ 4,000	\$ -	\$ -	\$ 96,000	\$ 96,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	32,195	CF		\$ 1.0	\$ 0.5	\$ -	\$ 32,195	\$ 16,097	\$ 48,292
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	138,711	FT	\$ 145	\$ 87	\$ 58	\$ 20,113,078	\$ 12,067,847	\$ 8,045,231	\$ 40,226,155
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	72	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 424,656	\$ 708,947	\$ 202,556	\$ 1,336,159
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	24	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 639,816	\$ 383,890	\$ 255,926	\$ 1,279,632
3.11	Fiber Optic Cable	46,237	FT	\$ 7	\$ 3	\$ 2	\$ 342,015	\$ 153,997	\$ 102,665	\$ 598,676
3.12	Ground Continuity Conductor	46,237	FT	\$ 13	\$ 8	\$ 5	\$ 602,884	\$ 348,026	\$ 232,017	\$ 1,182,926
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 38,346,592	\$ 35,001,236	\$ 19,719,466	\$ 93,067,293
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,641,621	\$ 1,094,414	\$ -	\$ 1,641,621	\$ 1,094,414	\$ 2,736,035
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.3	Construction Project Management / Supervision	1	LS		3,722,691.74		\$ -	\$ 3,722,692	\$ -	\$ 3,722,692
4.4	Utility PM and Project Oversight	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.5	Site Accommodation, Facilities, Storage	1	LS	930,672.93			\$ 930,673	\$ -	\$ -	\$ 930,673
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,653,365	\$ -	\$ -	\$ 4,653,365	\$ -	\$ 4,653,365
4.7	LiDAR /GPR	1.0	LS		\$ 167,521	\$ 111,681	\$ -	\$ 167,521	\$ 111,681	\$ 279,202
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 390,883	\$ 260,588	\$ -	\$ 390,883	\$ 260,588	\$ 651,471
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 930,673		\$ -	\$ 930,673	\$ -	\$ 930,673
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 279,202		\$ -	\$ 279,202	\$ -	\$ 279,202
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 34,478	\$ -	\$ -	\$ 34,478	\$ 34,478
4.16	Legal Fees (Real estate)	1.00	LS		-	1,034.34	\$ -	\$ -	\$ 1,034	\$ 1,034
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,300,000	\$ -	\$ -	\$ 3,300,000	\$ 3,300,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 38,346,591.60			\$ 3,405,177	\$ -	\$ -	\$ 3,405,177
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 93,067	\$ -	\$ -	\$ 93,067	\$ 93,067
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365

NEXTera Energy- TO39 Core 4

Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ -	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO39 Core 4

Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ -	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kv 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kv 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kv 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kv 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kv 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kv 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kv 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kv 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kv 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kv Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kv)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO39 Core 4

Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit

Total: \$ 232,454,478

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126
SUBTOTAL (Costs):	\$ 59,773,498	\$ 69,663,101	\$ 34,726,168	\$ 164,162,767
CONTRACTOR MARK-UP (OH&P)	\$ 10,759,230	\$ 12,539,358	\$ 6,250,710	\$ 29,549,298
SUBTOTAL:	\$ 70,532,728	\$ 82,202,459	\$ 40,976,879	\$ 193,712,065
CONTINGENCY ON ENTIRE PROJECT	\$ 14,106,546	\$ 16,440,492	\$ 8,195,376	\$ 38,742,413
TOTAL:	\$ 84,639,274	\$ 98,642,950	\$ 49,172,254	\$ 232,454,478

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.59	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	480,266	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 960,531	\$ 720,398	\$ 240,133	\$ 1,921,062
2.3	Trench Excavation	40,022	CY		\$ 17.5	\$ 7.5	\$ -	\$ 700,387	\$ 300,166	\$ 1,000,553
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,501	SF	\$ 50	\$ 25	\$ 14	\$ 125,069	\$ 61,284	\$ 35,019	\$ 221,372
2.5	Supply & Install Thermal Backfill	21,012	CY	\$ 350	\$ 245	\$ 105	\$ 7,354,067	\$ 5,147,847	\$ 2,206,220	\$ 14,708,134
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,782	CY	\$ 200	\$ 125	\$ 50	\$ 1,956,415	\$ 1,222,760	\$ 489,104	\$ 3,668,279
2.9	Conduit 8" SCH 40PVC	244,781	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 7,000,731	\$ 1,387,907	\$ 594,817	\$ 8,983,455
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	122,390	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 430,814	\$ 385,530	\$ 165,227	\$ 981,571
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 30,598	\$ 12,239	\$ 61,195
2.13	Trench Box Shoring (Vault)	38	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 687,006	\$ 1,030,508	\$ 1,717,514
2.14	Splice Vault Excavation	5,202	CY		\$ 17.5	\$ 7.5	\$ -	\$ 91,031	\$ 39,013	\$ 130,044
2.15	Splice Vault Supply & Installation	38	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,330,000	\$ 627,000	\$ 1,463,000	\$ 3,420,000
2.16	Splice Vault Backfill	1,561	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,847	\$ 9,363	\$ 31,211
2.17	Jack and Bore along Route	250	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 200,000	\$ 400,000	\$ 400,000	\$ 1,000,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ 367,171	LF			\$ 0.25	\$ -	\$ -	\$ 91,793	\$ 91,793
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	22,979	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 321,707	\$ 321,707	\$ 160,854	\$ 804,269
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,383	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 142,853	\$ 149,996	\$ 64,284	\$ 357,134
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	98	EA		\$ 400	\$ 1,200	\$ -	\$ 39,128	\$ 117,385	\$ 156,513
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	98	EA		\$ 10	\$ 15	\$ -	\$ 978	\$ 1,467	\$ 2,446

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	210	EA		\$ 400	\$ 1,200	\$ -	\$ 84,046	\$ 252,139	\$ 336,186
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	56,762	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,390,679	\$ 596,005	\$ 1,986,684
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	38	EA			\$ 4,000	\$ -	\$ -	\$ 152,000	\$ 152,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	45,224	CF		\$ 1.0	\$ 0.5	\$ -	\$ 45,224	\$ 22,612	\$ 67,836
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	114	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 672,372	\$ 1,122,499	\$ 320,714	\$ 2,115,585
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	38	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 1,013,042	\$ 607,825	\$ 405,217	\$ 2,026,084
3.11	Fiber Optic Cable	64,255	FT	\$ 7	\$ 3	\$ 2	\$ 475,294	\$ 214,008	\$ 142,672	\$ 831,973
3.12	Ground Continuity Conductor	64,255	FT	\$ 13	\$ 8	\$ 5	\$ 837,820	\$ 483,647	\$ 322,431	\$ 1,643,899
TOTAL -ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 53,699,423	\$ 48,982,817	\$ 27,874,401	\$ 130,556,641
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,305,717	\$ 1,537,144	\$ -	\$ 2,305,717	\$ 1,537,144	\$ 3,842,861
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.3	Construction Project Management / Supervision	1	LS		5,222,265.65		\$ -	\$ 5,222,266	\$ -	\$ 5,222,266
4.4	Utility PM and Project Oversight	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.5	Site Accommodation, Facilities, Storage	1	LS	1,305,566.41			\$ 1,305,566	\$ -	\$ -	\$ 1,305,566
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,527,832	\$ -	\$ -	\$ 6,527,832	\$ -	\$ 6,527,832
4.7	LiDAR /GPR	1.0	LS		\$ 235,002	\$ 156,668	\$ -	\$ 235,002	\$ 156,668	\$ 391,670
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 548,338	\$ 365,559	\$ -	\$ 548,338	\$ 365,559	\$ 913,896
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,305,566		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 391,670		\$ -	\$ 391,670	\$ -	\$ 391,670
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,640,000	\$ -	\$ -	\$ 4,640,000	\$ 4,640,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 53,699,423.07			\$ 4,768,509	\$ -	\$ -	\$ 4,768,509
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 130,557	\$ -	\$ -	\$ 130,557	\$ 130,557
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126

NEXTera Energy- TO39 Core 4

Comp 87. Farragut to Sparin Brook Landing 345kV Offshore Submarine Cables - Single circuit

Farragut-Sprain Brook 345KV

Total: \$ 606,610,596

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-Spr				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 139,758,995	\$ 117,082,632	\$ 74,945,444	\$ 331,787,071
2. TRANSITION STATION	\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 15,667,460	\$ 50,496,889	\$ 29,029,995	\$ 95,194,345
SUBTOTAL (Costs):	\$ 155,842,806	\$ 168,143,761	\$ 104,410,747	\$ 428,397,314
CONTRACTOR MARK-UP (OH&P)	\$ 28,051,705	\$ 30,265,877	\$ 18,793,934	\$ 77,111,516
SUBTOTAL:	\$ 183,894,511	\$ 198,409,638	\$ 123,204,682	\$ 505,508,830
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ 101,101,766
TOTAL:	\$ 183,894,511	\$ 198,409,638	\$ 123,204,682	\$ 606,610,596

Description of Work: Part of Farragut-Sprain Brook 345kV segment (Include HDD's to get onshore at both ends of route)-submarine cable										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-Spr										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	252,067	FT	\$ 537	\$ 400	\$ 250	\$ 135,360,086	\$ 100,826,880	\$ 63,016,800	\$ 299,203,766
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 12,758,038	\$ 8,505,358	\$ -	\$ 12,758,038	\$ 8,505,358	\$ 21,263,396
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.5	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	126,034	FT	\$ 7			\$ 932,271	\$ -	\$ -	\$ 932,271
1.8	Ground Continuity Conductor	126,034	FT	\$ 13			\$ 1,643,352	\$ -	\$ -	\$ 1,643,352
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	2,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,600,000	\$ 3,200,000	\$ 3,200,000	\$ 8,000,000
TOTAL - Submarine cable:							\$ 139,758,995	\$ 117,082,632	\$ 74,945,444	\$ 331,787,071
2. TRANSITION STATION										
2.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 5,400	\$ 3,600	\$ 9,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	807	CY		24.50	10.50	\$ -	\$ 19,763	\$ 8,470	\$ 28,233
2.4	Site Grading- Excavation for Substation Pad	2,420	CY		9.00	6.00	\$ -	\$ 21,780	\$ 14,520	\$ 36,300
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,307	CY		21.00	9.00	\$ -	\$ 27,442.80	\$ 11,761.20	\$ 39,204.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,960	CY		2.40	1.60	\$ -	\$ 4,704	\$ 3,136	\$ 7,841
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	1,307	CY	25.00	2.40	1.60	\$ 32,670	\$ 3,136	\$ 2,091	\$ 37,897
2.8	Install substation 8" pad base	2,420	SY	11.00	6.00	4.00	\$ 26,620	\$ 14,520	\$ 9,680	\$ 50,820
2.9	Site Surfacing - Aggregate 6" Thick	2,420	SY	16.50	4.50	3.00	\$ 39,930	\$ 10,890	\$ 7,260	\$ 58,080
2.10	7' Station Fence w/ Barbed Wire & Grounding	450	LF	13.85	13.85	6.92	\$ 6,232	\$ 6,232	\$ 3,116	\$ 15,579
2.11	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
2.12	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
2.13	Erosion Control-Silt fence install & remove	750	LF	2.41	3.16	0.72	\$ 1,808	\$ 2,370	\$ 540	\$ 4,718
2.14	Temporary fencing	500	LF	7.50	5.25	2.25	\$ 3,750	\$ 2,625	\$ 1,125	\$ 7,500
2.15	345kV, Cable sealing end - 3 Ph	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.16	345kV, lighting arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.17	345kV, Cable sealing end - 3 Ph	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
2.18	345kV, lighting arrester	\$ 6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
2.19	AL Bus Tubing, 5" SCH 80	630	LF	25.00	184.94	123.29	\$ 15,750	\$ 116,511	\$ 77,674	\$ 209,935
2.20	AL Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	-	-	\$ 836	\$ -	\$ -	\$ 836
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000
2.23	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,430	\$ 1,215	\$ 135	\$ 3,780
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	1,294	CY		\$ 17.5	\$ 7.5	\$ -	\$ 22,649	\$ 9,707	\$ 32,356
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.27	Splice Vault Backfill	388	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,436	\$ 2,330	\$ 7,765
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	1,178	CY		\$ 24.5	\$ 10.5	\$ -	\$ 28,855	\$ 12,366	\$ 41,221
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	1,294	CF		\$ 1.0	\$ 0.5	\$ -	\$ 1,294	\$ 647	\$ 1,941
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 140,175,346	\$ 117,646,872	\$ 75,380,752	\$ 333,202,969
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,332,029.69		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		13,328,118.77		\$ -	\$ 13,328,119	\$ -	\$ 13,328,119
3.4	Utility PM and Project Oversight	1	LS		3,332,029.69		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.5	Site Accommodation, Facilities, Storage	1	LS	3,332,029.69			\$ 3,332,030	\$ -	\$ -	\$ 3,332,030
	Engineering									
3.6	Design Engineering	1	LS		\$ 16,660,148		\$ -	\$ 16,660,148	\$ -	\$ 16,660,148
3.7	Surveying/Staking	1	LS		\$ 2,332,421		\$ -	\$ 2,332,421	\$ -	\$ 2,332,421
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,332,030		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.11	Environmental-special studies/investigation	-	LS				\$ -	\$ -	\$ -	\$ -
3.12	Warranties / LOC's	1	LS		\$ 999,609		\$ -	\$ 999,609	\$ -	\$ 999,609
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 749,316	\$ -	\$ -	\$ 749,316	\$ 749,316
3.15	Legal Fees (Real estate)	1.00	LS		-	22,479.48	\$ -	\$ -	\$ 22,479	\$ 22,479
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
3.19	Bonds	1	LS			\$ 12,120,000	\$ -	\$ -	\$ 12,120,000	\$ 12,120,000
3.20	Sales Tax on Materials	8.8%	LS	\$ 140,175,346			\$ 12,335,430	\$ -	\$ -	\$ 12,335,430
3.21	Contractor Permits	1	LS		\$ 333,203		\$ -	\$ 333,203	\$ -	\$ 333,203
3.22	Payment & Performance Bond	1	LS			\$ 12,120,000	\$ -	\$ -	\$ 12,120,000	\$ 12,120,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 15,667,460	\$ 50,496,889	\$ 29,029,995	\$ 95,194,345

NEXTera Energy- TO39 Core 4

Comp 85 - Sprian Brook Sub to Sparin Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit

Farragut-Sprain Brook 345KV

Total: \$ 72,630,069

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 802,816	\$ 3,964,730	\$ 1,586,886	\$ 6,354,432
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 5,504,698	\$ 5,167,046	\$ 3,326,770	\$ 13,998,514
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 10,234,014	\$ 6,167,008	\$ 3,965,048	\$ 20,366,071
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,876,078	\$ 6,488,998	\$ 2,208,328	\$ 10,573,404
SUBTOTAL (Costs):	\$ 18,417,606	\$ 21,787,782	\$ 11,087,033	\$ 51,292,421
CONTRACTOR MARK-UP (OH&P)	\$ 3,315,169	\$ 3,921,801	\$ 1,995,666	\$ 9,232,636
SUBTOTAL:	\$ 21,732,776	\$ 25,709,583	\$ 13,082,699	\$ 60,525,057
CONTINGENCY ON ENTIRE PROJECT	\$ 4,346,555	\$ 5,141,917	\$ 2,616,540	\$ 12,105,011
TOTAL:	\$ 26,079,331	\$ 30,851,499	\$ 15,699,239	\$ 72,630,069

Description of Work: Part of Farragut-Sprain Brook 345kV segment -UG cable										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	3.24	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 2,268,000	\$ 972,000	\$ 3,240,000
1.3	Flaggers	100	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 160,000	\$ 480,000	\$ 160,000	\$ 800,000
1.4	K Rail / Lane Control / Metal Plates	17,107	LF	\$ 30	\$ 18	\$ 12	\$ 513,216	\$ 307,930	\$ 205,286	\$ 1,026,432
1.5	Police Support	4,000.0	HR		\$ 120	\$ 27	\$ -	\$ 480,000	\$ 108,000	\$ 588,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	3.24	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 129,600	\$ 388,800	\$ 129,600	\$ 648,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 802,816	\$ 3,964,730	\$ 1,586,886	\$ 6,354,432
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	3.24	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 452,952	\$ 301,968	\$ 754,920
2.2	Formwork in Trench	134,218	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 268,435	\$ 201,326	\$ 67,109	\$ 536,870
2.3	Trench Excavation	6,711	CY		\$ 17.5	\$ 7.5	\$ -	\$ 117,440	\$ 50,332	\$ 167,772
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	699	SF	\$ 50	\$ 25	\$ 14	\$ 34,953	\$ 17,127	\$ 9,787	\$ 61,866
2.5	Supply & Install Thermal Backfill	5,872	CY	\$ 350	\$ 245	\$ 105	\$ 2,055,207	\$ 1,438,645	\$ 616,562	\$ 4,110,414
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	2,734	CY	\$ 200	\$ 125	\$ 50	\$ 546,750	\$ 341,719	\$ 136,688	\$ 1,025,157
2.9	Conduit 8" SCH 40PVC	68,429	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 1,957,064	\$ 387,991	\$ 166,282	\$ 2,511,337
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	34,214	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 120,435	\$ 107,775	\$ 46,189	\$ 274,399
2.12	Warning Tape	34,214	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 5,132	\$ 8,554	\$ 3,421	\$ 17,107
2.13	Trench Box Shoring (Vault)	11	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 198,870	\$ 298,305	\$ 497,175
2.14	Splice Vault Excavation	1,097	CY		\$ 17.5	\$ 7.5	\$ -	\$ 19,199	\$ 8,228	\$ 27,427
2.15	Splice Vault Supply & Installation	11	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 385,000	\$ 181,500	\$ 423,500	\$ 990,000
2.16	Splice Vault Backfill	329	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,608	\$ 1,975	\$ 6,582
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ 102,643	LF			\$ 0.25	\$ -	\$ -	\$ 25,661	\$ 25,661
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	6,516	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 91,218	\$ 91,218	\$ 45,609	\$ 228,044
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,810	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 40,505	\$ 42,530	\$ 18,227	\$ 101,262
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	27	EA		\$ 400	\$ 1,200	\$ -	\$ 10,935	\$ 32,805	\$ 43,740
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	27	EA		\$ 10	\$ 15	\$ -	\$ 410	\$ 410	\$ 683
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	59	EA		\$ 400	\$ 1,200	\$ -	\$ 23,488	\$ 70,464	\$ 93,952

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	9,722	CY		\$ 24.5	\$ 10.5	\$ -	\$ 238,201	\$ 102,086	\$ 340,287
2.27	Rock Excavation and Removal	5,205	CY		\$ 243	\$ 162	\$ -	\$ 1,264,887	\$ 843,258	\$ 2,108,146
2.28	Dewatering	11	EA			\$ 4,000	\$ -	\$ -	\$ 44,000	\$ 44,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	7,808	CF		\$ 1.0	\$ 0.5	\$ -	\$ 7,808	\$ 3,904	\$ 11,712
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 5,504,698	\$ 5,167,046	\$ 3,326,770	\$ 13,998,514
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	53,888	FT	\$ 167	\$ 100	\$ 67	\$ 8,999,243	\$ 5,399,546	\$ 3,599,697	\$ 17,998,485
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	33	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 386,826	\$ 324,934	\$ 92,838	\$ 804,598
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	11	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 314,033	\$ 188,420	\$ 125,613	\$ 628,066
3.11	Fiber Optic Cable	17,963	FT	\$ 7	\$ 3	\$ 2	\$ 132,869	\$ 59,826	\$ 39,884	\$ 232,579
3.12	Ground Continuity Conductor	17,963	FT	\$ 13	\$ 8	\$ 5	\$ 234,214	\$ 135,204	\$ 90,136	\$ 459,554
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 10,234,014	\$ 6,167,008	\$ 3,965,048	\$ 20,366,071
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 16,541,529	\$ 15,298,784	\$ 8,878,705	\$ 40,719,017
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 725,325	\$ 483,550	\$ -	\$ 725,325	\$ 483,550	\$ 1,208,874
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		407,190.17		\$ -	\$ 407,190	\$ -	\$ 407,190
4.3	Construction Project Management / Supervision	1	LS		1,628,760.69		\$ -	\$ 1,628,761	\$ -	\$ 1,628,761
4.4	Utility PM and Project Oversight	1	LS		407,190.17		\$ -	\$ 407,190	\$ -	\$ 407,190
4.5	Site Accommodation, Facilities, Storage	1	LS	407,190.17			\$ 407,190	\$ -	\$ -	\$ 407,190
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 2,035,951	\$ -	\$ -	\$ 2,035,951	\$ -	\$ 2,035,951
4.7	LiDAR /GPR	1.0	LS		\$ 73,294	\$ 48,863	\$ -	\$ 73,294	\$ 48,863	\$ 122,157
4.8	Geotech	4.00	EA		2,730	1,820	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
4.9	Surveying/Staking	1	LS		\$ 171,020	\$ 114,013	\$ -	\$ 171,020	\$ 114,013	\$ 285,033
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 407,190		\$ -	\$ 407,190	\$ -	\$ 407,190
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 122,157		\$ -	\$ 122,157	\$ -	\$ 122,157
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 71,751	\$ -	\$ -	\$ 71,751	\$ 71,751
4.16	Legal Fees (Real estate)	1.00	LS		-	2,152.53	\$ -	\$ -	\$ 2,153	\$ 2,153
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,440,000	\$ -	\$ -	\$ 1,440,000	\$ 1,440,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 16,541,528.51			\$ 1,468,888	\$ -	\$ -	\$ 1,468,888
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 40,719	\$ -	\$ -	\$ 40,719	\$ 40,719
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,876,078	\$ 6,488,998	\$ 2,208,328	\$ 10,573,404

NEXtera Energy- TO39 Core 4

Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit

Total: \$ 5,354,910

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351
SUBTOTAL (Costs):	\$ 1,083,440	\$ 2,001,924	\$ 696,353	\$ 3,781,716
CONTRACTOR MARK-UP (OH&P)	\$ 195,019	\$ 360,346	\$ 125,343	\$ 680,709
SUBTOTAL:	\$ 1,278,459	\$ 2,362,270	\$ 821,696	\$ 4,462,425
CONTINGENCY ON ENTIRE PROJECT	\$ 255,692	\$ 472,454	\$ 164,339	\$ 892,485
TOTAL:	\$ 1,534,151	\$ 2,834,724	\$ 986,035	\$ 5,354,910

Description of Work: Rebuild 0.2 mile of UG line (trench, conduits and cable), single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.20	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	1,056	LF	\$ 30	\$ 18	\$ 12	\$ 31,680	\$ 19,008	\$ 12,672	\$ 63,360
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	0.20	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 8,000	\$ 24,000	\$ 8,000	\$ 40,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.20	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 27,960	\$ 18,640	\$ 46,600
2.2	Formwork in Trench	8,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 16,512	\$ 12,384	\$ 4,128	\$ 33,024
2.3	Trench Excavation	688	CY		\$ 17.5	\$ 7.5	\$ -	\$ 12,040	\$ 5,160	\$ 17,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	43	SF	\$ 50	\$ 25	\$ 14	\$ 2,150	\$ 1,054	\$ 602	\$ 3,806
2.5	Supply & Install Thermal Backfill	361	CY	\$ 350	\$ 245	\$ 105	\$ 126,420	\$ 88,494	\$ 37,926	\$ 252,840
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	168	CY	\$ 200	\$ 125	\$ 50	\$ 33,632	\$ 21,020	\$ 8,408	\$ 63,060
2.9	Conduit 8" SCH 40PVC	4,224	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 120,806	\$ 23,950	\$ 10,264	\$ 155,021
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	2,112	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 7,434	\$ 6,653	\$ 2,851	\$ 16,938
2.12	Warning Tape	2,112	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 317	\$ 528	\$ 211	\$ 1,056
2.13	Trench Box Shoring (Vault)	1	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 18,079	\$ 27,119	\$ 45,198
2.14	Splice Vault Excavation	137	CY		\$ 17.5	\$ 7.5	\$ -	\$ 2,396	\$ 1,027	\$ 3,422
2.15	Splice Vault Supply & Installation	1	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 35,000	\$ 16,500	\$ 38,500	\$ 90,000
2.16	Splice Vault Backfill	41	CY		\$ 14.0	\$ 6.0	\$ -	\$ 575	\$ 246	\$ 821
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	\$ 6,336	LF			\$ 0.25	\$ -	\$ -	\$ 1,584	\$ 1,584
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 5,696	\$ 5,696	\$ 2,848	\$ 14,241
2.21	PVMT, AGGREGATE, 10", BASE COURSE	113	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 2,529	\$ 1,138	\$ 1,138	\$ 6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$ 400	\$ 1,200	\$ -	\$ 673	\$ 2,018	\$ 2,691

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$ 10	\$ 15	\$ -	\$ 17	\$ 25	\$ 42
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LiDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

<u>NEXtera Energy- TO39 Core 4</u>	
<u>Other Comp. 138kV Upgrades</u>	
Total:	\$ 16,870,335

	Total:	\$	16,870,335
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Other Comp. 138kV Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Comp. 138kV Upgrades				
1. West Bus-Kings CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378
CONTRACTOR MARK-UP (OH&P)	\$ 829,380	\$ 872,432	\$ 442,722	\$ 2,144,534
SUBTOTAL:	\$ 5,437,050	\$ 5,719,276	\$ 2,902,287	\$ 14,058,612
CONTINGENCY ON ENTIRE PROJECT	\$ 1,087,410	\$ 1,143,855	\$ 580,457	\$ 2,811,722
TOTAL:	\$ 6,524,459	\$ 6,863,131	\$ 3,482,744	\$ 16,870,335

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1. West Bus-Kings CT Upgrade										
1.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
1.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
1.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
							\$ - from	\$ -	\$ -	\$ -
TOTAL - West Bus-Kings-Pilgrim CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,155,935.10	\$ 2,096,798.80	\$ 2,015,966.10	\$ 8,268,700.00
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 123,383	\$ 82,255	\$ -	\$ 123,383	\$ 82,255	\$ 205,638
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.3	Construction Project Management / Supervision	1	LS		330,748.00		\$ -	\$ 330,748	\$ -	\$ 330,748
4.4	Utility PM and Project Oversight	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.5	Site Accommodation, Facilities, Storage	1	LS	82,687.00			\$ 82,687	\$ -	\$ -	\$ 82,687
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 413,435	\$ -	\$ -	\$ 413,435	\$ -	\$ 413,435
4.7	LIDAR	1.00	LS		\$ 14,884	\$ 9,922	\$ -	\$ 14,884	\$ 9,922	\$ 24,806
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,729	\$ 23,152	\$ -	\$ 34,729	\$ 23,152	\$ 57,881
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,687		\$ -	\$ 82,687	\$ -	\$ 82,687
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,806		\$ -	\$ 24,806	\$ -	\$ 24,806
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 320,000	\$ -	\$ -	\$ 320,000	\$ 320,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,155,935.10			\$ 369,047	\$ -	\$ -	\$ 369,047
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,269	\$ -	\$ -	\$ 8,269	\$ 8,269
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378

NEXtera Energy- TO39 Core 4	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO39 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 _Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversite is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable.
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
42	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 3 circuits, 2 cable per circuit, so there are 6 passes.
43	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications -	
44	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
45	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
46	Substation pad is based on 8" base and 6" surfacing rock.
47	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
48	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
49	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
50	All substation segments construction period is based on milestone schedule provided
51	Assume concrete cantilever retaining wall for Sprain Brook expansion, the assumed dimension details please see the tab
52	Assume 70% rock for Sprain brook 345kV expansion excavation

NEXTera Energy- TO40 Core 5		
REVISION: 1		
NEXTera Energy- TO40 Core 5 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 54,287,315
Direct Labor, Material & Equipment Costs	2.Station 252 East Garden City 345/138 kV Substation Upgrades	\$ 158,123,262
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,095,138
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 322,019,268
Direct Labor, Material & Equipment Costs	12 - Northport 345/138kV AIS & 138KV GIS Substation	\$ 55,117,719
Direct Labor, Material & Equipment Costs	13. Exisitng Ruland Road 345/138 kV Substation	\$ 1,077,395
Direct Labor, Material & Equipment Costs	14.Existing East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 855,937,344
CONTRACTOR MARK-UP (OH&P)		\$ 136,815,122
SUBTOTAL (AFTER MU):		\$ 992,752,466
CONTINGENCY ON ENTIRE PROJECT		\$ 198,550,493
Substation TOTAL:		\$ 1,191,302,959
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (Northport To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 195,310,866
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 296,059,014
Direct Labor, Material & Equipment Costs	Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 398,396,284
Direct Labor, Material & Equipment Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Sprain Brook 345 kV)	\$ 117,895,360
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit	\$ 130,556,641
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 8,268,700
SUBTOTAL (Costs):		\$ 1,749,666,442
CONTRACTOR MARK-UP (OH&P)		\$ 314,939,959
SUBTOTAL (AFTER MU):		\$ 2,064,606,401
CONTINGENCY ON ENTIRE PROJECT		\$ 412,921,280
Transmission Line TOTAL:		\$ 2,477,527,681
NEXTera Energy- TO40 Core 5Total Direct Cost		\$ 3,668,830,641

NEXtera Energy- TO40 Core 5 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 15,736,579
Indirect Costs	2.Station 252 East Garden City 345/138 kV Substation Upgrades	\$ 76,129,096
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 334,752
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 99,114,306
Indirect Costs	12 - Northport 345/138kV AIS & 138KV GIS Substation	\$ 14,847,820
Indirect Costs	13. Exisitng Ruland Road 345/138 kV Substation	\$ 356,246
Indirect Costs	14.Existing East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 283,655,088
CONTRACTOR MARK-UP (OH&P)		\$ 51,057,916
SUBTOTAL (AFTER MU):		\$ 334,713,004
CONTINGENCY ON ENTIRE PROJECT		\$ 66,942,601
Substation TOTAL:		\$ 401,655,605
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (Northport To Dunwoodie 345 kV)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 49,373,632
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each) EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 74,702,824
Indirect Costs	Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 95,795,299
Indirect Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Sprain Brook 345 kV)	\$ 30,601,618
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kV)	\$ 50,420,274
Indirect Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit	\$ 33,606,126
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,645,378
SUBTOTAL (Costs):		\$ 441,182,172
CONTRACTOR MARK-UP (OH&P)		\$ 79,412,791
SUBTOTAL (AFTER MU):		\$ 520,594,962
CONTINGENCY ON ENTIRE PROJECT		\$ 104,118,992
Transmission Line TOTAL:		\$ 624,713,955
NEXtera Energy- TO40 Core 5 Total Indirect Cost		\$ 1,026,369,560
NEXtera Energy- TO40 Core 5 Total		\$ 4,695,200,201

NEXTera Energy- TO40 Core 5

1. Station 29 New Ruland Road 345/138 kV Substation

1

Total: \$ 97,499,274

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736.40
2. SUBSTATION FOUNDATIONS	\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,218.94
3. SUBSTATION STRUCTURES	\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495.18
4. MAJOR EQUIPTMENT	\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,118.75
6. CONDUIT & CABLE TRENCH	\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,295.54
7. GROUND GRID	\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,313.85
8. CONTROL ENCLOSURE	\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,857.96
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579.19
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 29,397,161	\$ 19,987,089	\$ 9,149,644	\$ 58,533,894
SUBTOTAL (Costs):	\$ 35,142,161	\$ 23,434,089	\$ 11,447,644	\$ 70,023,894
CONTRACTOR MARK-UP (OH&P)	\$ 5,636,189	\$ 3,804,496	\$ 1,784,816	\$ 11,225,501
SUBTOTAL:	\$ 40,778,350	\$ 27,238,585	\$ 13,232,460	\$ 81,249,395
CONTINGENCY ON ENTIRE PROJECT	\$ 8,155,670	\$ 5,447,717	\$ 2,646,492	\$ 16,249,879
TOTAL:	\$ 48,934,020	\$ 32,686,303	\$ 15,878,952	\$ 97,499,274

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1. Station 29 New Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 37,800	\$ 25,200	\$ 63,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	5,647	CY		24.50	10.50	\$ -	\$ 138,343	\$ 59,290	\$ 197,633
1.5	Site Grading- Excavation for Substation Pad	16,940	CY		9.00	6.00	\$ -	\$ 152,460	\$ 101,640	\$ 254,100
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	9,148	CY		21.00	9.00	\$ -	\$ 192,099.60	\$ 82,328.40	\$ 274,428.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	13,721	CY		2.40	1.60	\$ -	\$ 32,931	\$ 21,954	\$ 54,886
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	9,148	CY	25.00	2.40	1.60	\$ 228,690	\$ 21,954	\$ 14,636	\$ 265,280
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	16,940	SY	11.00	6.00	4.00	\$ 186,340	\$ 101,640	\$ 67,760	\$ 355,740
1.11	Site Surfacing - Aggregate 6" Thick	16,940	SY	16.50	4.50	3.00	\$ 279,510	\$ 76,230	\$ 50,820	\$ 406,560
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,439	LF	13.85	13.85	6.92	\$ 19,927	\$ 19,927	\$ 9,964	\$ 49,818
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	11,952	SF	1.50	1.50	1.00	\$ 17,928	\$ 17,928	\$ 11,952	\$ 47,808
1.17	Erosion Control-Silt fence install & remove	2,700	LF	2.41	3.16	0.72	\$ 6,507	\$ 8,532	\$ 1,944	\$ 16,983
1.18	Temporary fencing	1,800	LF	7.50	5.25	2.25	\$ 13,500	\$ 9,450	\$ 4,050	\$ 27,000
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.10	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.11	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.12	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.13	345/138KV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,219
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	15	EA	4,810.00	2,886.00	1,924.00	\$ 72,150	\$ 43,290	\$ 28,860	\$ 144,300
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.10	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.11	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.12	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.20	AL. Bus fittings	1	LS	22,500.00	22,500.00	11,250.00	\$ 22,500	\$ 22,500	\$ 11,250	\$ 56,250
3.21	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495
4. MAJOR EQUIPMENT										
4.1	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600
4.2	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.4	345/138KV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800
4.5	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.6	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	37,500	LF	5.30	1.43	0.29	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,750	LF	11.15	10.80	5.40	\$ 75,263	\$ 72,900	\$ 36,450	\$ 184,613
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.14	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,296
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,705	LF	2.09	3.42	1.46	\$ 26,566	\$ 43,391	\$ 18,596	\$ 88,554
7.2	Caweld, DSA, 4/0 , T, CROSS	351	EA	165.00	75.00		\$ 57,915	\$ 26,325	\$ -	\$ 84,240
7.3	Ground Rod, 3/4" x 15'	312	EA	135.00	67.50	7.50	\$ 42,120	\$ 21,060	\$ 2,340	\$ 65,520
TOTAL - GROUND GRID							\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,314
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 An	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.15	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,858
1. Station 29 New Ruland Road 345/138 kV Substation							\$ 31,906,422	\$ 14,324,879	\$ 8,056,013	\$ 54,287,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		582,256.23	249,538.38	\$ -	\$ 582,256	\$ 249,538	\$ 831,795
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,711,892.59		\$ -	\$ 1,711,893	\$ -	\$ 1,711,893
9.4	Utility PM and Project Oversight	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.5	Site Accommodation, Facilities, Storage	1	LS	427,973.15			\$ 427,973	\$ -	\$ -	\$ 427,973
	Engineering									
9.6	Design Engineering	1.00	LS		3,423,785.17		\$ -	\$ 3,423,785	\$ -	\$ 3,423,785
9.7	LiDAR / GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		299,581.20		\$ -	\$ 299,581	\$ -	\$ 299,581
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,604,899.30		\$ -	\$ 1,604,899	\$ -	\$ 1,604,899
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		128,391.94		\$ -	\$ 128,392	\$ -	\$ 128,392
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,940,000	\$ -	\$ -	\$ 1,940,000	\$ 1,940,000
9.20	Sales Tax on Materials	8.80%	LS	31,906,422.41			\$ 2,807,765	\$ -	\$ -	\$ 2,807,765
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		54,287.31		\$ -	\$ 54,287	\$ -	\$ 54,287
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579

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NEXTera Energy- TO40 Core 5

2.Station 252 East Garden City 345/138 kV Substation Upgrades

Total: \$ 326,629,659

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 252 East Garden City 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541.10
2. SUBSTATION FOUNDATIONS	\$ 4,940,586	\$ 5,259,191	\$ 3,304,826	\$ 13,504,603.49
3. SUBSTATION STRUCTURES	\$ 1,403,520	\$ 901,180	\$ 499,166	\$ 2,803,866.69
4. MAJOR EQUIPTMENT	\$ 83,434,236	\$ 15,021,057	\$ 9,912,305	\$ 108,367,597.50
5. LOW VOLTAGE & CONTROL CABLE	\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877.20
6. CONDUIT & CABLE TRENCH	\$ 8,724,708	\$ 4,948,997	\$ 2,709,691	\$ 16,383,396.54
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924.35
8. CONTROL ENCLOSURE	\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,454.73
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,565,337	\$ 26,272,726	\$ 39,291,033	\$ 76,129,096
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 99,049,709	\$ 48,374,371	\$ 51,608,278	\$ 199,032,358
SUBTOTAL (Costs):	\$ 116,659,709	\$ 58,940,371	\$ 58,652,278	\$ 234,252,358
CONTRACTOR MARK-UP (OH&P)	\$ 18,885,548	\$ 9,341,347	\$ 9,712,130	\$ 37,939,024
SUBTOTAL:	\$ 135,545,257	\$ 68,281,718	\$ 68,364,407	\$ 272,191,382
CONTINGENCY ON ENTIRE PROJECT	\$ 27,109,051	\$ 13,656,344	\$ 13,672,881	\$ 54,438,276
TOTAL:	\$ 162,654,308	\$ 81,938,062	\$ 82,037,289	\$ 326,629,659

Description of Work: New East Garden City 345 kV/138 kV GIS Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 252 East Garden City 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	166	CY	703.89	804.44	502.78	\$ 116,775	\$ 133,457	\$ 83,410	\$ 333,641
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	54	CY	703.89	804.44	502.78	\$ 37,658	\$ 43,038	\$ 26,898	\$ 107,594
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.17	345kV, Phase Angle Regulator with oil containment	890	CY	703.89	804.44	502.78	\$ 626,458	\$ 715,952	\$ 447,470	\$ 1,789,879
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.21	345kV, Surge arrester	80	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	1,885	CY	703.89	804.44	502.78	\$ 1,326,795	\$ 1,516,337	\$ 947,711	\$ 3,790,843
2.31	Precast Firewall for transformer, PARs, reactors	28,530	SF	25.00	15.00	10.00	\$ 713,250	\$ 427,950	\$ 285,300	\$ 1,426,500
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 4,940,586	\$ 5,259,191	\$ 3,304,826	\$ 13,504,603
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	15	EA	8,346.00	5,758.74	3,839.16	\$ 125,190	\$ 86,381	\$ 57,587	\$ 269,159
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	18	EA	8,346.00	5,758.74	3,839.16	\$ 150,228	\$ 103,657	\$ 69,105	\$ 322,990
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	5	EA	8,346.00	5,758.74	3,839.16	\$ 41,730	\$ 28,794	\$ 19,196	\$ 89,720
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	4,896.84	4,896.84	2,448.42	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	1,050	LF	25.00	184.94	123.29	\$ 26,250	\$ 194,185	\$ 129,457	\$ 349,892
3.20	AL. Bus fittings	1	LS	31,500.00	31,500.00	15,750.00	\$ 31,500	\$ 31,500	\$ 15,750	\$ 78,750
3.21	Steel grating and support beams-transformer moat	346,240	LB	2.73	1.17	0.50	\$ 945,864	\$ 404,755	\$ 173,466	\$ 1,524,085
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,403,520	\$ 901,180	\$ 499,166	\$ 2,803,867
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	18.00	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	15	EA	17,400.00	5,460.00	2,340.00	\$ 261,000	\$ 81,900	\$ 35,100	\$ 378,000
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.11	Transport & Testing- Shunt Reactor	6	EA		272,900.20	178,266.80	\$ -	\$ 1,637,401	\$ 1,069,601	\$ 2,707,002
4.12	345kV, Phase Angle Regulator with oil containment	2	EA	25,764,000.00	3,520.00	880.00	\$ 51,528,000	\$ 7,040	\$ 1,760	\$ 51,536,800
4.11	Transport & Testing- PARs	2	EA		1,215,400.00	806,600.00	\$ -	\$ 2,430,800	\$ 1,613,200	\$ 4,044,000
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	15	EA	6,669.00	5,460.00	2,340.00	\$ 100,035	\$ 81,900	\$ 35,100	\$ 217,035
4.18	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester		EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 83,434,236	\$ 15,021,057	\$ 9,912,305	\$ 108,367,598
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	16,800	LF	5.30	1.43	0.29	\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,450	LF	11.15	10.80	5.40	\$ 38,468	\$ 37,260	\$ 18,630	\$ 94,358
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
6.16										
6.17							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,724,708	\$ 4,948,997	\$ 2,709,691	\$ 16,383,397
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0, T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	10	EA	21,328.12	17,062.49	4,265.62	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
8.4	Backup Line Relays (87L): GE L90	10	EA	21,328.12	17,062.49	4,265.62	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 An	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.22	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.23	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
2.Station 252 East Garden City 345/138 kV Substation Upgrades							\$ 106,094,372	\$ 32,667,646	\$ 19,361,244	\$ 158,123,262
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,821,011.14	780,433.35	\$ -	\$ 1,821,011	\$ 780,433	\$ 2,601,444
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,916,130.46		\$ -	\$ 4,916,130	\$ -	\$ 4,916,130
9.4	Utility PM and Project Oversight	1	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.5	Site Accommodation, Facilities, Storage	1	LS	1,229,032.62			\$ 1,229,033	\$ -	\$ -	\$ 1,229,033
	Engineering									
9.6	Design Engineering	1.00	LS		9,832,260.93		\$ -	\$ 9,832,261	\$ -	\$ 9,832,261
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		860,322.83		\$ -	\$ 860,323	\$ -	\$ 860,323
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,608,872.31		\$ -	\$ 4,608,872	\$ -	\$ 4,608,872
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		368,709.78		\$ -	\$ 368,710	\$ -	\$ 368,710
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 6,520,000	\$ -	\$ -	\$ 6,520,000	\$ 6,520,000
9.20	Sales Tax on Materials	8.80%	LS	106,094,371.82			\$ 9,336,305	\$ -	\$ -	\$ 9,336,305
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		158,123.26		\$ -	\$ 158,123	\$ -	\$ 158,123
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,565,337	\$ 26,272,726	\$ 39,291,033	\$ 76,129,096

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NEXTera Energy- TO40 Core 5

3.Station 48 Valley Stream 345/138 kV Substation Upgrades

Total: \$ 143,522,216

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648.03
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,008.98
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326.07
4. MAJOR EQUIPTMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,512.50
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,506.90
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146.28
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324.00
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282.34
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.Station 48 Valley Stream 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	620,000.00	415,000.00	\$ -	\$ 620,000	\$ 415,000	\$ 1,035,000
1.3	New Access Road - 20'	889	SY	4.85	7.20	4.80	\$ 4,312	\$ 6,401	\$ 4,267	\$ 14,980
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	11,761	CY		9.00	6.00	\$ -	\$ 105,849	\$ 70,566	\$ 176,415
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,057	CY		2.40	1.60	\$ -	\$ 16,937	\$ 11,291	\$ 28,228
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,704	CY	25.00	2.40	1.60	\$ 117,600	\$ 11,290	\$ 7,526	\$ 136,416
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,712	SY	11.00	6.00	4.00	\$ 95,832	\$ 52,272	\$ 34,848	\$ 182,952
1.11	Site Surfacing - Aggregate 6" Thick	8,712	SY	16.50	4.50	3.00	\$ 143,748	\$ 39,204	\$ 26,136	\$ 209,088
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,222	LF	13.85	13.85	6.92	\$ 30,770	\$ 30,770	\$ 15,385	\$ 76,926
1.13	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
1.14	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,583	LF	2.41	3.16	0.72	\$ 6,225	\$ 8,162	\$ 1,860	\$ 16,247
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	333	SY	19.50	26.00	19.50	\$ 6,500	\$ 8,667	\$ 6,500	\$ 21,667
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138kV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 An	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR / GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
4.Barrett 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,399.86
2. SUBSTATION FOUNDATIONS	\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,923.90
3. SUBSTATION STRUCTURES	\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,415.76
4. MAJOR EQUIPMENT	\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679.20
6. CONDUIT & CABLE TRENCH	\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,906.57
7. GROUND GRID	\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125.40
8. CONTROL ENCLOSURE	\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,873.67
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 22,313,583	\$ 13,117,388	\$ 8,801,554	\$ 44,232,524
SUBTOTAL (Costs):	\$ 28,058,583	\$ 16,564,388	\$ 11,099,554	\$ 55,722,524
CONTRACTOR MARK-UP (OH&P)	\$ 4,361,145	\$ 2,567,950	\$ 1,722,160	\$ 8,651,254
SUBTOTAL:	\$ 32,419,728	\$ 19,132,338	\$ 12,821,713	\$ 64,373,779
CONTINGENCY ON ENTIRE PROJECT	\$ 6,483,946	\$ 3,826,468	\$ 2,564,343	\$ 12,874,756
TOTAL:	\$ 38,903,673	\$ 22,958,805	\$ 15,386,056	\$ 77,248,534

Description of Work: Construct a new Barrett 138kV GIS substation adjacent to the existing Barrett 138kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 23,760	\$ 15,840	\$ 39,600
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,115	SY	4.85	7.20	4.80	\$ 10,257	\$ 15,227	\$ 10,151	\$ 35,636
1.4	Strip and Dispose Top Soil	3,549	CY		24.50	10.50	\$ -	\$ 86,959	\$ 37,268	\$ 124,227
1.5	Site Grading- Excavation for Substation Pad	10,648	CY		9.00	6.00	\$ -	\$ 95,832	\$ 63,888	\$ 159,720
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	5,750	CY		21.00	9.00	\$ -	\$ 120,748.32	\$ 51,749.28	\$ 172,497.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	8,625	CY		2.40	1.60	\$ -	\$ 20,700	\$ 13,800	\$ 34,500
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	5,750	CY	25.00	2.40	1.60	\$ 143,748	\$ 13,800	\$ 9,200	\$ 166,748
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	10,648	SY	11.00	6.00	4.00	\$ 117,128	\$ 63,888	\$ 42,592	\$ 223,608
1.11	Site Surfacing - Aggregate 6" Thick	10,648	SY	16.50	4.50	3.00	\$ 175,692	\$ 47,916	\$ 31,944	\$ 255,552
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,056	LF	13.85	13.85	6.92	\$ 14,623	\$ 14,623	\$ 7,312	\$ 36,559
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	8,896	SF	1.50	1.50	1.00	\$ 13,344	\$ 13,344	\$ 8,896	\$ 35,584
1.17	Erosion Control-Silt fence install & remove	1,620	LF	2.41	3.16	0.72	\$ 3,904	\$ 5,119	\$ 1,166	\$ 10,190
1.18	Temporary fencing	1,080	LF	7.50	5.25	2.25	\$ 8,100	\$ 5,670	\$ 2,430	\$ 16,200
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL. Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ar	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

NEXtera Energy- TO40 Core 5

5.Dunwoodie 345 kV GIS Substation

1Total: \$ 64,677,743

NEXtera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
5.Dunwoodie 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913.33
2. SUBSTATION FOUNDATIONS	\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,636.77
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,510.66
4. MAJOR EQUIPMENT	\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,524.75
6. CONDUIT & CABLE TRENCH	\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157.00
7. GROUND GRID	\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001.14
8. CONTROL ENCLOSURE	\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,195.83
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 11,599,927	\$ 9,176,864	\$ 6,637,039	\$ 27,413,830
SUBTOTAL (Costs):	\$ 21,764,927	\$ 15,275,864	\$ 10,703,039	\$ 47,743,830
CONTRACTOR MARK-UP (OH&P)	\$ 2,697,887	\$ 2,017,775	\$ 1,438,627	\$ 6,154,289
SUBTOTAL:	\$ 24,462,814	\$ 17,293,639	\$ 12,141,665	\$ 53,898,119
CONTINGENCY ON ENTIRE PROJECT	\$ 4,892,563	\$ 3,458,728	\$ 2,428,333	\$ 10,779,624
TOTAL:	\$ 29,355,377	\$ 20,752,367	\$ 14,569,999	\$ 64,677,743

Description of Work: Construct a new Dunwoodie 345kV GIS substation. Loop in the Pleasantville (2) and Sprain Brook lines and connect back to the existing Dunwoodie 345kV substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
5.Dunwoodie 345 kV GIS Substation											
1. SITE PREP/ GRADING/ FENCING / CIVIL											
1.1	Site Clearing	1.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 17,137	\$ 11,425	\$ 28,562	
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -	3.7 AC-345KV YARD 0.6AC-138KV YARD (assume lot size 120x215) , Asphalt parking lot and business building
1.3	New Access Road - 20'	1,263	SY	4.85	7.20	4.80	\$ 6,124	\$ 9,092	\$ 6,061	\$ 21,278	Interior access road- Assumes Type gravel road. Measure dwg- assume 12" stabilized subbased compacted, with geogrid (8" base & 6" rock cover included in substation base & surfacing)
1.4	Strip and Dispose Top Soil	2,560	CY		24.50	10.50	\$ -	\$ 62,720	\$ 26,880	\$ 89,600	Assume 1' top soil
1.5	Site Grading- Excavation for Substation Pad	7,680	CY		9.00	6.00	\$ -	\$ 69,120	\$ 46,080	\$ 115,200	Assume excavate avg 3', no rock
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	4,147	CY		21.00	9.00	\$ -	\$ 87,091.20	\$ 37,324.80	\$ 124,416.00	
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	6,221	CY		2.40	1.60	\$ -	\$ 14,930	\$ 9,953	\$ 24,883	Assume reuse 60% from excavation, truck measure
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,147	CY	25.00	2.40	1.60	\$ 103,680	\$ 9,953	\$ 6,636	\$ 120,269	Assume bring in 40%, truck measure
1.9	Blasting		EA	-	-	-	\$ -	\$ -	\$ -	\$ -	
1.10	Install substation 8" pad base	7,680	SY	11.00	6.00	4.00	\$ 84,480	\$ 46,080	\$ 30,720	\$ 161,280	Estimate based on 8" base
1.11	Site Surfacing - Aggregate 6" Thick	7,680	SY	16.50	4.50	3.00	\$ 126,720	\$ 34,560	\$ 23,040	\$ 184,320	Estimate based on 4" surface stone
1.12	7' Station Fence w/ Barbed Wire & Grounding	864	LF	13.85	13.85	6.92	\$ 11,965	\$ 11,965	\$ 5,982	\$ 29,912	Perimeter-gates W'. Assume grounding every 100'
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300	Including concrete pad for the doors
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700	Including concrete pad for the doors
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	325,073.45	83,781.82	55,348.36	\$ 325,073	\$ 83,782	\$ 55,348	\$ 464,204	Crew 4- 10 hr/day,
1.16	Seeding	7,296	SF	1.50	1.50	1.00	\$ 10,944	\$ 10,944	\$ 7,296	\$ 29,184	Assume sod 3:1 slope, 8" all around
1.17	Erosion Control-Silt fence install & remove	2,100	LF	2.41	3.16	0.72	\$ 5,061	\$ 6,636	\$ 1,512	\$ 13,209	Qty based on site perimeter plus 50% rework
1.18	Temporary fencing	1,400	LF	7.50	5.25	2.25	\$ 10,500	\$ 7,350	\$ 3,150	\$ 21,000	Perimeter
1.19	Substation entrance with asphalt	486	SY	19.50	26.00	19.50	\$ 9,479	\$ 12,639	\$ 9,479	\$ 31,597	24' wide with asphalt-> no info on dwg
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -	
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -	
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913	
2. SUBSTATION FOUNDATIONS											
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 17.81cu.yds/str
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 36.66cu.yds/str
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 7.92cu.yds/str
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 5.53cu.yds/str
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 7.92cu.yds/str
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 6.6cu.yds/str
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.06cu.yds/str, see clarification note 3 above
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.6cu.yds/str
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.06cu.yds/str
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 5.35cu.yds/str
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 5.35cu.yds/str
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 7.92cu.yds/str
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 328cu.yds/str
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386	(1) @ 305cu.yds/str
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 126cu.yds/str
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 445cu.yds/str
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 20cu.yds/str

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 20cu.yds/str
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063	(1) @ 1264cu.yds/str
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -	(1) @ 5.35cu.yds/str
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 154cu.yds/str
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.45cu.yds/str
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 5.35cu.yds/str
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.06cu.yds/str
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 6.06cu.yds/str
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.06cu.yds/str
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -	(1) @ 5.35cu.yds/str
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 5.35cu.yds/str
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 18.19cu.yds/str
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189	(39) @ 7.92cu.yds/str
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000	Assume 30' H
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -	-
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 0.75cu.yds/str
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 630cu.yds/str
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637	
3. SUBSTATION STRUCTURES											
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -	
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -	
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -	
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -	
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -	
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -	
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -	
3.20	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -	
3.21	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -	
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511	
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511	
4. MAJOR EQUIPMENT											
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -	
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -	
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -	
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -	
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -	
4.6	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -	
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825	
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500	Hot pot testing, Shipping, Unloading, Assembly and Testing
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000	Price Including Shipping and Assembly
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -	
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -	
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -	
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -	
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -	
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -	
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -	
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -	
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -	
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -	
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -	
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000	
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50			\$ -	\$ -	see clarification note 3 above
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00			\$ -	\$ -	see clarification note 3 above
4.28	Transport & Testing- GIL	0	LS	-	-	-			\$ -	\$ -	see clarification note 3 above
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325	
5. LOW VOLTAGE & CONTROL CABLE											
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525	
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -	
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525	
6. CONDUIT & CABLE TRENCH											
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -	
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205	
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -	
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -	
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -	
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952	
6.7											
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -	Assume no splice in betwwen 345/138kv yard. Concrete encastment with thermal backfill- Internal connection

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -	Internal connection
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -	Internal connection
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -	Assume no splice in between 345/138kv yard. Concrete encastment with thermal backfill- Internal connection
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -	Internal connection
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -	Internal connection
6.14	Fiber Optic Cable			7.40	3.33	2.22					Internal connection
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -	Internal connection
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157	
7. GROUND GRID											
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221	
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880	
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900	
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001	
8. CONTROL ENCLOSURE											
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884	195'x75'
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -	150'X45'
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594	Qty & cost provided by Sub Station Eng-345kv GIS
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594	Qty & cost provided by Sub Station Eng-345kv GIS
8.5	Primary Bay Control: SEL-451	4	EA	4,265.62	17,062.49	85,312	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625	Qty & cost provided by Sub Station Eng-345kv GIS
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625	Qty & cost provided by Sub Station Eng-345kv GIS
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656	Qty & cost provided by Sub Station Eng-345kv GIS
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656	Qty & cost provided by Sub Station Eng-345kv GIS
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969	Qty & cost provided by Sub Station Eng-345kv GIS
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969	Qty & cost provided by Sub Station Eng-345kv GIS
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000	Qty & cost provided by Sub Station Eng-345kv GIS
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000	Qty & cost provided by Sub Station Eng-345kv GIS
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000	Qty & cost provided by Sub Station Eng-345kv GIS
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312	Qty & cost provided by Sub Station Eng-345kv
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312	Qty & cost provided by Sub Station Eng-345kv
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000	SECo price battery
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000	Assume for 345 control house and 138kv GIS/control house
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000	Assume for 345 control house and 138kv GIS/control house
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000	Assume for 345 control house and 138kv GIS/control house
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196	
5.Dunwoodie 345 kV GIS Substation											
							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264	Total Direct Costs
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS											
Contractor Mobilization / Demobilization											
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809	5% of LA+EQ (Less GIS and HVDC)
Project Management, Material Handling & Amenities											
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733	Assumes PM, Scheduler/Project Controls and a Cost Estimator will support pre-con stage full time.
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931	Include all PM Staff, Per Diems, Vehicles and Expenses for construction/close out.
9.4	Utility PM and Project Oversite	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733	
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733	
Engineering											
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861	8% of total direct cost (Less GIS and HVDC)
9.7	LIDAR / GPR	-	LS	-	-		\$ -	\$ -	\$ -	\$ -	
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750	5 Test Bores Per Yard.
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713	0.7% of total direct cost (Less GIS and HVDC)
Testing & Commissioning											
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747	3.75% of total direct cost (Less GIS and HVDC)
Permitting and Additional Costs											
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547	6P-6A, Sun&Sat all day. Security guard rate avg in NJ \$14.72/HR, used \$18
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733	1% of total direct cost (Less GIS and HVDC)
9.13	Environmental-special studies/investigation	-	LS	-	-		\$ -	\$ -	\$ -	\$ -	
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020	0.3% of total direct cost (Less GIS and HVDC, warranties included in their pricings)
9.15	Laydown Lease	-	LS	-	-		\$ -	\$ -	\$ -	\$ -	
9.16	Real Estate (Acquisition)	1.00	LS			2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000	
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150	3% of the real estate cost
9.18	Insurance	-	LS	-	-	-	\$ -	\$ -	\$ -	\$ -	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP)
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000	2% based on contract value
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104	8.8%, based on total material cost
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003	0.1%, based on total direct cost
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565	

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NEXTera Energy- TO40 Core 5

6.Elwood 138 kV Substation Upgrades

Total: \$ 7,946,839

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 60,000	\$ 40,000	\$ 100,000.00
2. SUBSTATION FOUNDATIONS	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,398.60
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,510.66
4. MAJOR EQUIPTMENT	\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,049.50
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410.00
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312.46
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,562.57
SUBTOTAL (Costs):	\$ 3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$ 692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$ 4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$ 908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$ 5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVar reactor (1 block) at the exisitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVAR)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345KV, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
7.Jamaica 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES	\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPTMENT	\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752
SUBTOTAL (Costs):	\$ 658,333	\$ 579,029	\$ 192,528	\$ 1,429,890
CONTRACTOR MARK-UP (OH&P)	\$ 118,500	\$ 104,225	\$ 34,655	\$ 257,380
SUBTOTAL:	\$ 776,832	\$ 683,255	\$ 227,183	\$ 1,687,270
CONTINGENCY ON ENTIRE PROJECT	\$ 155,366	\$ 136,651	\$ 45,437	\$ 337,454
TOTAL:	\$ 932,199	\$ 819,906	\$ 272,620	\$ 2,024,724

Description of Work: Add an additional terminal at the existing Jamaica 138kV substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345KV, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345/138kV Gas-Insulated Bus Conductor	246	LF	550.00	275.00	82.50	\$ 135,300	\$ 67,650	\$ 20,295	\$ 223,245
4.30	345/138kV Gas-Insulated Bus Conductor-elbow	6	EA	2,500.00	1,250.00	375.00	\$ 15,000	\$ 7,500	\$ 2,250	\$ 24,750
4.31	Transport & Testing- GIL	1	LS		27,054.00	18,036.00	\$ -	\$ 27,054	\$ 18,036	\$ 45,090
TOTAL - MAJOR EQUIPMENT							\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades							\$ 595,020	\$ 355,092	\$ 145,026	\$ 1,095,138
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,504.13	7,501.77	\$ -	\$ 17,504	\$ 7,502	\$ 25,006
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,805.51		\$ -	\$ 43,806	\$ -	\$ 43,806
9.4	Utility PM and Project Oversight	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.5	Site Accommodation, Facilities, Storage	1	LS	10,951.38			\$ 10,951	\$ -	\$ -	\$ 10,951
	Engineering									
9.6	Design Engineering	1.00	LS		87,611.01		\$ -	\$ 87,611	\$ -	\$ 87,611
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,665.96		\$ -	\$ 7,666	\$ -	\$ 7,666
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		41,067.66		\$ -	\$ 41,068	\$ -	\$ 41,068
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		10,951.38		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,285.41		\$ -	\$ 3,285	\$ -	\$ 3,285
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	595,019.53			\$ 52,362	\$ -	\$ -	\$ 52,362
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,095.14		\$ -	\$ 1,095	\$ -	\$ 1,095
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752

NEXTera Energy- TO40 Core 5

8.Newbridge 345/138 kV GIS Substation Upgrades

1

Total: \$89,858,233

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPTMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138kV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION	#REF!									
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 An	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
	Engineering									
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
9.Rainey 345kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$311,324	\$248,835	\$141,711	\$701,870
2. SUBSTATION FOUNDATIONS	\$802,429	\$917,062	\$573,164	\$2,292,654
3. SUBSTATION STRUCTURES	\$-	\$-	\$-	\$-
4. MAJOR EQUIPMENT	\$5,130,000	\$3,078,000	\$2,052,000	\$10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$-	\$-	\$-	\$-
6. CONDUIT & CABLE TRENCH	\$3,027,905	\$1,824,211	\$1,037,159	\$5,889,274
7. GROUND GRID	\$41,114	\$27,100	\$5,201	\$73,415
8. CONTROL ENCLOSURE	\$3,173,654	\$2,446,529	\$976,124	\$6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$1,254,341	\$3,460,378	\$2,963,002	\$7,677,720
Turnkey cost (HVDC, GIS)	\$5,130,000	\$3,078,000	\$2,052,000	\$10,260,000
Non-Turnkey cost	\$8,610,766	\$8,924,115	\$5,696,359	\$23,231,241
SUBTOTAL (Costs):	\$13,740,766	\$12,002,115	\$7,748,359	\$33,491,241
CONTRACTOR MARK-UP (OH&P)	\$1,857,738	\$1,791,021	\$1,148,465	\$4,797,223
SUBTOTAL:	\$15,598,504	\$13,793,136	\$8,896,824	\$38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$3,119,701	\$2,758,627	\$1,779,365	\$7,657,693
TOTAL:	\$18,718,205	\$16,551,763	\$10,676,189	\$45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.Rainey 345kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$-	\$8,856	\$5,904	\$14,760
1.2	Demolition	0	LS	-	-	-	\$-	\$-	\$-	\$-
1.3	New Access Road - 20'	989	SY	4.85	7.20	4.80	\$4,796	\$7,120	\$4,747	\$16,663
1.4	Strip and Dispose Top Soil	1,323	CY		24.50	10.50	\$-	\$32,412	\$13,891	\$46,303
1.5	Site Grading- Excavation for Substation Pad	3,969	CY		9.00	6.00	\$-	\$35,719	\$23,813	\$59,532
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,143	CY		21.00	9.00	\$-	\$45,006.19	\$19,288.37	\$64,294.56
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,215	CY		2.40	1.60	\$-	\$7,715	\$5,144	\$12,859
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,143	CY	25.00	2.40	1.60	\$53,579	\$5,144	\$3,429	\$62,151
1.9	Blasting		EA				\$-	\$-	\$-	\$-
1.10	Install substation 8" pad base	3,969	SY	11.00	6.00	4.00	\$43,657	\$23,813	\$15,875	\$83,345
1.11	Site Surfacing - Aggregate 6" Thick	3,969	SY	16.50	4.50	3.00	\$65,485	\$17,860	\$11,906	\$95,251
1.12	7' Station Fence w/ Barbed Wire & Grounding	726	LF	13.85	13.85	6.92	\$10,054	\$10,054	\$5,027	\$25,134
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$8,100	\$3,245	\$1,305	\$12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$2,500	\$1,000	\$350	\$3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	109,761.60	38,400.00	25,368.00	\$109,762	\$38,400	\$25,368	\$173,530
1.16	Seeding	3,000	SF	1.50	1.50	1.00	\$4,500	\$4,500	\$3,000	\$12,000
1.17	Erosion Control-Silt fence install & remove	1,200	LF	2.41	3.16	0.72	\$2,892	\$3,792	\$864	\$7,548
1.18	Temporary fencing	800	LF	7.50	5.25	2.25	\$6,000	\$4,200	\$1,800	\$12,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$-	\$-	\$-	\$-
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$-	\$-	\$-	\$-
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$-	\$-	\$-	\$-

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ar	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
	Engineering									
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LiDAR / GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

NEXTera Energy- TO40 Core 5

10.Shore Road 138kV Substation Upgrades

1

Total: \$ 13,943,860

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
10.Shore Road 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS	\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES	\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT	\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936
SUBTOTAL (Costs):	\$ 6,942,247	\$ 2,219,499	\$ 685,612	\$ 9,847,359
CONTRACTOR MARK-UP (OH&P)	\$ 1,249,604	\$ 399,510	\$ 123,410	\$ 1,772,525
SUBTOTAL:	\$ 8,191,851	\$ 2,619,009	\$ 809,023	\$ 11,619,883
CONTINGENCY ON ENTIRE PROJECT	\$ 1,638,370	\$ 523,802	\$ 161,805	\$ 2,323,977
TOTAL:	\$ 9,830,222	\$ 3,142,811	\$ 970,827	\$ 13,943,860

Description of Work: Add a new 250 MVAr reactor at the existing Shore Road 138kV station (5 block of 50 MVAr)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 540	\$ 360	\$ 900
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	81	CY		24.50	10.50	\$ -	\$ 1,976	\$ 847	\$ 2,823
1.5	Site Grading- Excavation for Substation Pad	242	CY		9.00	6.00	\$ -	\$ 2,178	\$ 1,452	\$ 3,630
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	131	CY		21.00	9.00	\$ -	\$ 2,744.28	\$ 1,176.12	\$ 3,920.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	196	CY		2.40	1.60	\$ -	\$ 470	\$ 314	\$ 784
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	131	CY	25.00	2.40	1.60	\$ 3,267	\$ 314	\$ 209	\$ 3,790
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	242	SY	11.00	6.00	4.00	\$ 2,662	\$ 1,452	\$ 968	\$ 5,082
1.11	Site Surfacing - Aggregate 6" Thick	242	SY	16.50	4.50	3.00	\$ 3,993	\$ 1,089	\$ 726	\$ 5,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345KV, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534
	Engineering									
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

NEXTera Energy- TO40 Core 5

11.Sprain Brook 345kV Substation Expansion

1

Total: \$ 596,325,142

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
11.Sprain Brook 345kV Substation Expansion				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS	\$ 1,920,956	\$ 2,166,878	\$ 1,355,611	\$ 5,443,445
3. SUBSTATION STRUCTURES	\$ 1,075,966	\$ 901,681	\$ 569,078	\$ 2,546,726
4. MAJOR EQUIPTMENT	\$ 10,402,779	\$ 1,823,144	\$ 1,072,736	\$ 13,298,659
5. LOW VOLTAGE & CONTROL CABLE	\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
6. CONDUIT & CABLE TRENCH	\$ 627,979	\$ 194,488	\$ 70,492	\$ 892,959
7. GROUND GRID	\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE	\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,237,695	\$ 73,613,826	\$ 18,262,785	\$ 99,114,306
SUBTOTAL (Costs):	\$ 52,891,131	\$ 204,429,946	\$ 163,812,498	\$ 421,133,575
CONTRACTOR MARK-UP (OH&P)	\$ 9,520,404	\$ 36,797,390	\$ 29,486,250	\$ 75,804,043
SUBTOTAL:	\$ 62,411,534	\$ 241,227,336	\$ 193,298,748	\$ 496,937,618
CONTINGENCY ON ENTIRE PROJECT	\$ 12,482,307	\$ 48,245,467	\$ 38,659,750	\$ 99,387,524
TOTAL:	\$ 74,893,841	\$ 289,472,804	\$ 231,958,497	\$ 596,325,142

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11.Sprain Brook 345kV Substation Expansion										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.4	ACRE	-	42,000.00	28,000.00	\$ -	\$ 224,902	\$ 149,935	\$ 374,837
1.2	Demolition	1	LS	-	120,000.00	80,000.00	\$ -	\$ 120,000	\$ 80,000	\$ 200,000
1.3	New Access Road - 20'	3,631	SY	4.85	7.20	4.80	\$ 17,611	\$ 26,144	\$ 17,429	\$ 61,184
1.4	Strip and Dispose Top Soil	8,639	CY		24.50	10.50	\$ -	\$ 211,658	\$ 90,711	\$ 302,369
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	56,901	CY		9.00	6.00	\$ -	\$ 512,110	\$ 341,407	\$ 853,517
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	227,604	CY		120.00	180.00	\$ -	\$ 27,312,533	\$ 40,968,800	\$ 68,281,333
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	384,083	CY		21.00	9.00	\$ -	\$ 8,065,732.50	\$ 3,456,742.50	\$ 11,522,475
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	11,380	SY	11.00	6.00	4.00	\$ 125,182	\$ 68,281	\$ 45,521	\$ 238,985
1.12	Site Surfacing - Aggregate 6" Thick	11,380	SY	16.50	4.50	3.00	\$ 187,774	\$ 51,211	\$ 34,141	\$ 273,125
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,300	LF	13.85	13.85	6.92	\$ 18,002	\$ 18,002	\$ 9,001	\$ 45,006
1.14	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.15	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	219,523.20	76,800.00	50,736.00	\$ 219,523	\$ 76,800	\$ 50,736	\$ 347,059
1.17	Seeding	130,834	SF	1.50	1.50	1.00	\$ 196,251	\$ 196,251	\$ 130,834	\$ 523,336
1.18	Erosion Control-Silt fence install & remove	3,900	LF	2.41	3.16	0.72	\$ 9,399	\$ 12,324	\$ 2,808	\$ 24,531
1.19	Temporary fencing	1,430	LF	7.50	5.25	2.25	\$ 10,725	\$ 7,508	\$ 3,218	\$ 21,450
1.20	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Concrete Retaining Wall- Soil excavation	99,073	CY		9.00	6.00	\$ -	\$ 891,661	\$ 594,440	\$ 1,486,101

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727
1.26	Concrete Retaining Walll- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	350	CY	703.89	804.44	502.78	\$ 246,360	\$ 281,554	\$ 175,971	\$ 703,885
2.15	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,920,956	\$ 2,166,878	\$ 1,355,611	\$ 5,443,445
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,075,966	\$ 901,681	\$ 569,078	\$ 2,546,726
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	16	EA	57,720.00	34,632.00	23,088.00	\$ 923,520	\$ 554,112	\$ 369,408	\$ 1,847,040
4.6	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,487.50	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.10	Transport & Testing- Shunt Reactor	2	EA		352,900.00	231,600.00	\$ -	\$ 705,800	\$ 463,200	\$ 1,169,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	641,250.00	384,750.00	256,500.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker	8	EA	350,000.00	57,239.00	24,531.00	\$ 2,800,000	\$ 457,912	\$ 196,248	\$ 3,454,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,194,419.50	716,651.70	477,767.80	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,402,779	\$ 1,823,144	\$ 1,072,736	\$ 13,298,659
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	43,800	LF	5.30	1.43	0.29	\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 232,031	\$ 62,744	\$ 12,549	\$ 307,323
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,100	LF	11.15	10.80	5.40	\$ 90,315	\$ 87,480	\$ 43,740	\$ 221,535
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,018	LF	266.50	53.04	13.26	\$ 537,664	\$ 107,008	\$ 26,752	\$ 671,424
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00				\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00				\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28				\$ -
6.11	345kV UG- Conduit	466	LF	266.73	202.15	100.00				\$ -
6.12	345kV UG- Cable	1,398	LF	167.00	100.20	66.80				\$ -
6.13	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				\$ -
6.14	Fiber Optic Cable	466	LF	7.40	3.33	2.22				\$ -
6.15	Ground Continuity Conductor	466	LF	13.04	7.53	5.02				\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 627,979	\$ 194,488	\$ 70,492	\$ 892,959
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,277	LF	2.09	3.42	1.46	\$ 36,126	\$ 59,006	\$ 25,288	\$ 120,421
7.2	Caweld, DSA, 4/0 , T, CROSS	462	EA	165.00	75.00		\$ 76,230	\$ 34,650	\$ -	\$ 110,880
7.3	Ground Rod, 3/4" x 15'	410	EA	135.00	67.50	7.50	\$ 55,350	\$ 27,675	\$ 3,075	\$ 86,100
TOTAL - GROUND GRID							\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	542,947.99	380,063.60	162,884.40	\$ 542,948	\$ 380,064	\$ 162,884	\$ 1,085,896

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,339,823	\$ 1,067,113	\$ 384,209	\$ 2,791,146
11.Sprain Brook 345kV Substation Expansion							\$ 45,653,436	\$ 130,816,120	\$ 145,549,713	\$ 322,019,268
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,672,804.15	4,145,487.49	\$ -	\$ 9,672,804	\$ 4,145,487	\$ 13,818,292
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		12,880,770.74		\$ -	\$ 12,880,771	\$ -	\$ 12,880,771
9.4	Utility PM and Project Oversight	1.00	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.5	Site Accommodation, Facilities, Storage	1.00	LS	3,220,192.68			\$ 3,220,193	\$ -	\$ -	\$ 3,220,193
	Engineering									
9.6	Design Engineering	1.00	LS		25,761,541.47		\$ -	\$ 25,761,541	\$ -	\$ 25,761,541
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,254,134.88		\$ -	\$ 2,254,135	\$ -	\$ 2,254,135
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		12,075,722.57		\$ -	\$ 12,075,723	\$ -	\$ 12,075,723
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,220,192.68		\$ -	\$ 3,220,193	\$ -	\$ 3,220,193
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		966,057.81		\$ -	\$ 966,058	\$ -	\$ 966,058
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,124,464.00	\$ -	\$ -	\$ 2,124,464	\$ 2,124,464
9.17	Legal Fees (Real estate)	1.00	LS		-	63,733.92	\$ -	\$ -	\$ 63,734	\$ 63,734
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 11,920,000	\$ -	\$ -	\$ 11,920,000	\$ 11,920,000
9.20	Sales Tax on Materials	8.80%	LS	45,653,435.63			\$ 4,017,502	\$ -	\$ -	\$ 4,017,502
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		322,019.27		\$ -	\$ 322,019	\$ -	\$ 322,019
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,237,695	\$ 73,613,826	\$ 18,262,785	\$ 99,114,306

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Total:

Total: \$97,007,683

NEXTera Energy- TO40 Core 5

12 - Northport 345/138kV AIS & 138KV GIS Substation

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Northport 345/138kV AIS & 138KV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$1,397,996	\$1,110,321	\$635,009	\$3,143,325
2. SUBSTATION FOUNDATIONS	\$1,906,076	\$1,924,785	\$1,173,176	\$5,004,037
3. SUBSTATION STRUCTURES	\$190,975	\$109,615	\$73,077	\$373,667
4. MAJOR EQUIPTMENT	\$23,681,938	\$6,693,277	\$4,293,523	\$34,668,738
5. LOW VOLTAGE & CONTROL CABLE	\$122,372	\$33,091	\$6,618	\$162,081
6. CONDUIT & CABLE TRENCH	\$3,006,834	\$1,598,746	\$835,218	\$5,440,798
7. GROUND GRID	\$267,816	\$193,605	\$45,270	\$506,690
8. CONTROL ENCLOSURE	\$2,680,988	\$2,231,267	\$906,128	\$5,818,383
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$3,334,317	\$8,645,309	\$2,868,194	\$14,847,820
Turnkey cost (HVDC, GIS)	\$7,165,000	\$4,299,000	\$2,866,000	\$14,330,000
Non-Turnkey cost	\$29,424,311	\$18,241,015	\$7,970,213	\$55,635,539
SUBTOTAL (Costs):	\$36,589,311	\$22,540,015	\$10,836,213	\$69,965,539
CONTRACTOR MARK-UP (OH&P)	\$5,726,276	\$3,541,323	\$1,606,598	\$10,874,197
SUBTOTAL:	\$42,315,587	\$26,081,338	\$12,442,811	\$80,839,736
CONTINGENCY ON ENTIRE PROJECT	\$8,463,117	\$5,216,268	\$2,488,562	\$16,167,947
TOTAL:	\$50,778,704	\$31,297,606	\$14,931,373	\$97,007,683

Description of Work: Construct a new Northport 138kV GIS substation adjacent to the existing Northport 138kV substation. Tie the existing Pilgrim-Northport 138kV lines, the new 345/138kV transformers, and the existing Northport 138kV substation into the 138kV breaker-and-a-half bus configuration.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Northport 345/138kV AIS & 138KV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	21,000.00	14,000.00	\$-	\$84,000	\$56,000	\$140,000
1.2	Demolition	0	ACRE	-	-	-	\$-	\$-	\$-	\$-
1.3	New Access Road - 20'	4,489	SY	4.85	7.20	4.80	\$21,771	\$32,320	\$21,547	\$75,638
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$-	\$158,107	\$67,760	\$225,867
1.5	Site Grading- Excavation for Substation Pad	19,360	CY		9.00	6.00	\$-	\$174,240	\$116,160	\$290,400
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	10,454	CY		21.00	9.00	\$-	\$219,542.40	\$94,089.60	\$313,632.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	15,682	CY		2.40	1.60	\$-	\$37,636	\$25,091	\$62,726
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	10,454	CY	25.00	2.40	1.60	\$261,360	\$25,091	\$16,727	\$303,178
1.9	Install substation 8" pad base	9,680	SY	11.00	6.00	4.00	\$106,480	\$58,080	\$38,720	\$203,280
1.10	Site Surfacing - Aggregate 6" Thick	14,520	SY	16.50	4.50	3.00	\$239,580	\$65,340	\$43,560	\$348,480
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,992	LF	13.85	13.85	6.92	\$27,585	\$27,585	\$13,793	\$68,963
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$16,200	\$6,490	\$2,610	\$25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$5,000	\$2,000	\$700	\$7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	670,464.00	172,800.00	114,156.00	\$670,464	\$172,800	\$114,156	\$957,420
1.15	Seeding	16,800	SF	1.50	1.50	1.00	\$25,200	\$25,200	\$16,800	\$67,200
1.16	Erosion Control-Silt fence install & remove	3,287	LF	2.41	3.16	0.72	\$7,921	\$10,386	\$2,366	\$20,674
1.17	Temporary fencing	2,191	LF	7.50	5.25	2.25	\$16,434	\$11,504	\$4,930	\$32,868
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$-	\$-	\$-	\$-
1.19	Concrete curb		LF	26.00	27.30	11.70	\$-	\$-	\$-	\$-
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$1,397,996	\$1,110,321	\$635,009	\$3,143,325
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.12	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.15	345/138KV, Single-Phase 560MVA Power Transformer with oil containenet	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.16	345kV, Shunt Reactor with oil containment-350MVAR	450	CY	703.89	804.44	502.78	\$ 316,748	\$ 361,998	\$ 226,249	\$ 904,995
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	262	CY	703.89	804.44	502.78	\$ 184,418	\$ 210,763	\$ 131,727	\$ 526,908
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, GIS Enclosure-BLDG	490	CY	703.89	804.44	502.78	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
2.25	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.30	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.31	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.32	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 1,906,076	\$ 1,924,785	\$ 1,173,176	\$ 5,004,037
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.11	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.12	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.15	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	2	EA							
3.19	138kV, Cable sealing end	2	EA	4,066.40	1,443.00	962.00	\$ 8,133	\$ 2,886	\$ 1,924	\$ 12,943
3.20	138kV, Surge arrester	6	EA	4,066.40	1,443.00	962.00	\$ 24,398	\$ 8,658	\$ 5,772	\$ 38,828
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 190,975	\$ 109,615	\$ 73,077	\$ 373,667
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.7	345/138KV, Single-Phase 560MVA Power Transformer with oil containmenet	2	EA	5,220,000.00	3,520.00	880.00	\$ 10,440,000	\$ 7,040	\$ 1,760	\$ 10,448,800
4.8	Transport & Testing- Transformer	2	EA		771,400.00	510,600.00	\$ -	\$ 1,542,800	\$ 1,021,200	\$ 2,564,000
4.9	345kV, Shunt Reactor with oil containment-350MVAR	1	EA	4,310,025.00	3,520.00	880.00	\$ 4,310,025	\$ 3,520	\$ 880	\$ 4,314,425
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		374,020.00	247,880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		339,150.00	145,350.00	\$ -	\$ 339,150	\$ 145,350	\$ 484,500
4.12	345kV, Phase Angle Regulator	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	3	EA	6,669.00	5,460.00	2,340.00	\$ 20,007	\$ 16,380	\$ 7,020	\$ 43,407
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600
4.19	138Kv, GIS indoor	15	EA	477,666.67	286,600.00	191,066.67	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
4.20	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.24	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 23,681,938	\$ 6,693,277	\$ 4,293,523	\$ 34,668,738
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	23,100	LF	5.30	1.43	0.29	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,650	LF	11.15	10.80	5.40	\$ 51,848	\$ 50,220	\$ 25,110	\$ 127,178
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,113	LF	266.50	53.04	13.26	\$ 296,481	\$ 59,007	\$ 14,752	\$ 370,240
6.8	138kV UG- Conduit	2,449	LF	266.73	202.15	100.00	\$ 653,224	\$ 495,057	\$ 244,912	\$ 1,393,193
6.9	138kV UG- Cable	7,714	LF	145.00	87.00	58.00	\$ 1,118,581	\$ 671,148	\$ 447,432	\$ 2,237,162
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	2,571	LF	7.40	3.33	2.22	\$ 19,021	\$ 8,564	\$ 5,710	\$ 33,295
6.14	Ground Continuity Conductor	2,571	LF	13.04	7.53	5.02	\$ 33,529	\$ 19,355	\$ 12,904	\$ 65,788
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,006,834	\$ 1,598,746	\$ 835,218	\$ 5,440,798
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	27,485	LF	2.09	3.42	1.46	\$ 57,471	\$ 93,870	\$ 40,230	\$ 191,570
7.2	Caweld, DSA, 4/0 , T, CROSS	725	EA	165.00	75.00		\$ 119,625	\$ 54,375	\$ -	\$ 174,000
7.3	Ground Rod, 3/4" x 15'	672	EA	135.00	67.50	7.50	\$ 90,720	\$ 45,360	\$ 5,040	\$ 141,120
TOTAL - GROUND GRID							\$ 267,816	\$ 193,605	\$ 45,270	\$ 506,690
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	1	EA	384,814.39	346,332.95	230,888.63	\$ 384,814	\$ 346,333	\$ 230,889	\$ 962,036
8.2	345kV, GIS Enclosure-BLDG	1	EA	878,048.71	614,634.10	263,414.61	\$ 878,049	\$ 614,634	\$ 263,415	\$ 1,756,097
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.15	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.16	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.17	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.18	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.19	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.20	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.21	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.22	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.23	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.24	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.26	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,680,988	\$ 2,231,267	\$ 906,128	\$ 5,818,383
12 - Northport 345/138kV AIS & 138KV GIS Substation							\$ 33,254,994	\$ 13,894,706	\$ 7,968,019	\$ 55,117,719
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		514,420.36	220,465.87	\$ -	\$ 514,420	\$ 220,466	\$ 734,886
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		407,877.19		\$ -	\$ 407,877	\$ -	\$ 407,877
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,631,508.75		\$ -	\$ 1,631,509	\$ -	\$ 1,631,509
9.4	Utility PM and Project Oversight	1	LS		407,877.19		\$ -	\$ 407,877	\$ -	\$ 407,877
9.5	Site Accommodation, Facilities, Storage	1	LS	407,877.19			\$ 407,877	\$ -	\$ -	\$ 407,877
	Engineering									
9.6	Design Engineering	1.00	LS		3,263,017.49		\$ -	\$ 3,263,017	\$ -	\$ 3,263,017
9.7	LiDAR / GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		285,514.03		\$ -	\$ 285,514	\$ -	\$ 285,514
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,529,539.45		\$ -	\$ 1,529,539	\$ -	\$ 1,529,539
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		407,877.19		\$ -	\$ 407,877	\$ -	\$ 407,877
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		122,363.16		\$ -	\$ 122,363	\$ -	\$ 122,363
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	678,280.00	\$ -	\$ -	\$ 678,280	\$ 678,280
9.17	Legal Fees (Real estate)	1.00	LS		-	20,348.40	\$ -	\$ -	\$ 20,348	\$ 20,348
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,940,000	\$ -	\$ -	\$ 1,940,000	\$ 1,940,000
9.20	Sales Tax on Materials	8.80%	LS	33,254,994.22			\$ 2,926,439	\$ -	\$ -	\$ 2,926,439
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		55,117.72		\$ -	\$ 55,118	\$ -	\$ 55,118
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,334,317	\$ 8,645,309	\$ 2,868,194	\$ 14,847,820

NEXTera Energy- TO40 Core 5

13. Exisitng Ruland Road 345/138 kV Substation

1

Total: \$ 2,030,035

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
13. Exisitng Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at exisitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13. Exisitng Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus fittings	0	LS	22,500.00	22,500.00	11,250.00	\$ -	\$ -	\$ -	\$ -
3.21	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.2	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.4	345/138kV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.5	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.13	Fiber Optic Cable		LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.14	Ground Continuity Conductor		LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	0	EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.21	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.22	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
13. Exisitng Ruland Road 345/138 kV Substation							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXTera Energy- TO40 Core 5

14.Existing East Garden City 138 kV Substation Upgrades

1

Total: \$ 28,298,464

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
14.Existing East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPTMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14.Existing East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.20	AL. Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.21	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0.00	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.9	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		272,900.20	178,266.80	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator with oil containment	0	EA	25,764,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- PARs	0	EA		1,215,400.00	806,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
6.16										
6.17							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.22	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.23	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.24	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.25	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
14.Existing East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversight	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
	Engineering									
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

NEXtera Energy- TO40 Core 5

Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit

(Northport To Dunwoodie 345 kV)

1

Total: \$ 188,625,656

NEXtera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 7	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR /GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Backfill	1,795	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,133	\$ 10,771	\$ 35,904
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	536,659	LF			\$ 0.25	\$ -	\$ -	\$ 134,165	\$ 134,165
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	28,581	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 400,133	\$ 400,133	\$ 200,067	\$ 1,000,333
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,939	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 177,678	\$ 186,562	\$ 79,955	\$ 444,195
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	138	EA		\$ 400	\$ 1,200	\$ -	\$ 55,097	\$ 165,291	\$ 220,388
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	138	EA		\$ 10	\$ 15	\$ -	\$ 1,377	\$ 2,066	\$ 3,444
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	296	EA		\$ 400	\$ 1,200	\$ -	\$ 118,264	\$ 354,791	\$ 473,055
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 462,462	\$ 308,308	\$ -	\$ 462,462	\$ 308,308	\$ 770,770
2.24	Excess Materials Disposal to Certified Backfill	49,372	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,209,614	\$ 518,406	\$ 1,728,020
2.25	Rock Excavation and Removal	26,516	CY		\$ 243	\$ 162	\$ -	\$ 6,443,332	\$ 4,295,555	\$ 10,738,886
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,774	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,774	\$ 19,887	\$ 59,660
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	93,915	FT	\$ 7	\$ 3	\$ 2	\$ 694,692	\$ 312,794	\$ 208,530	\$ 1,216,016
3.12	Ground Continuity Conductor	93,915	FT	\$ 13	\$ 8	\$ 5	\$ 1,224,562	\$ 706,901	\$ 471,267	\$ 2,402,731
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain							\$ 83,180,792	\$ 70,079,524	\$ 42,050,550	\$ 195,310,866
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,363,902	\$ 2,242,601	\$ -	\$ 3,363,902	\$ 2,242,601	\$ 5,606,504
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		7,812,434.62		\$ -	\$ 7,812,435	\$ -	\$ 7,812,435
4.4	Utility PM and Project Oversight	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.5	Site Accommodation, Facilities, Storage	1	LS	1,953,108.66			\$ 1,953,109	\$ -	\$ -	\$ 1,953,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,765,543	\$ -	\$ -	\$ 9,765,543	\$ -	\$ 9,765,543
4.7	LiDAR /GPR	1.0	LS		\$ 351,560	\$ 234,373	\$ -	\$ 351,560	\$ 234,373	\$ 585,933
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 820,306	\$ 546,870	\$ -	\$ 820,306	\$ 546,870	\$ 1,367,176
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,953,109		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 585,933		\$ -	\$ 585,933	\$ -	\$ 585,933
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 247,533	\$ -	\$ -	\$ 247,533	\$ 247,533
4.16	Legal Fees (Real estate)	1.00	LS		-	7,425.99	\$ -	\$ -	\$ 7,426	\$ 7,426
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,920,000	\$ -	\$ -	\$ 6,920,000	\$ 6,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 83,180,791.58			\$ 7,386,454	\$ -	\$ -	\$ 7,386,454
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 195,311	\$ -	\$ -	\$ 195,311	\$ 195,311
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632

NEXTera Energy- TO40 Core 5

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Double circuits (two lines, single circuit each)

EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV

1Total: \$524,998,762

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Rulan				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$116,979,561	\$104,729,644	\$71,163,184	\$292,872,389
2. TRANSITION STATION	\$920,987	\$1,160,115	\$1,105,523	\$3,186,625
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$13,335,838	\$46,001,031	\$15,365,954	\$74,702,824
SUBTOTAL (Costs):	\$131,236,386	\$151,890,790	\$87,634,662	\$370,761,837
CONTRACTOR MARK-UP (OH&P)	\$23,622,549	\$27,340,342	\$15,774,239	\$66,737,131
SUBTOTAL:	\$154,858,935	\$179,231,132	\$103,408,901	\$437,498,968
CONTINGENCY ON ENTIRE PROJECT	\$30,971,787	\$35,846,226	\$20,681,780	\$87,499,793.60
TOTAL:	\$185,830,722	\$215,077,358	\$124,090,681	\$524,998,762

Description of Work: New Rochelle landing - Hempstead Harbor Landing. Part of any Dunwoodie to Shore/Ruland/EGC 345 kV project segment (Include HDD's to get onshore at both ends of route) 1600 mm2 Tri-Core

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-Sprai										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	200,260	FT	\$537	\$400	\$250	\$107,539,534	\$80,103,936	\$50,064,960	\$237,708,430
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$10,135,879	\$6,757,252	\$-	\$10,135,879	\$6,757,252	\$16,893,131
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$-	\$-	\$-	\$-
1.4	Cable Transition Splice	8	EA	\$27,911	\$37,214	\$27,911	\$223,286	\$297,715	\$223,286	\$744,286
1.5	Outdoor Termination	8	EA	\$27,911	\$37,214	\$27,911	\$223,286	\$297,715	\$223,286	\$744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$-	\$-	\$-	\$-
1.7	Fiber Optic Cable	100,130	FT	\$7			\$740,661	\$-	\$-	\$740,661
1.8	Ground Continuity Conductor	100,130	FT	\$13			\$1,305,594	\$-	\$-	\$1,305,594
1.9							\$-	\$-	\$-	\$-
1.10	Jack and Bore along Route	0	LF	\$1,600	\$3,200	\$3,200	\$-	\$-	\$-	\$-
1.11	HDD along Route	4,342	LF	\$1,600	\$3,200	\$3,200	\$6,947,200	\$13,894,400	\$13,894,400	\$34,736,000
TOTAL - Submarine cable:							\$116,979,561	\$104,729,644	\$71,163,184	\$292,872,389
2. TRANSITION STATION										
2.1	Site Clearing	1.0	ACRE	-	10,800.00	7,200.00	\$-	\$10,800	\$7,200	\$18,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$-	\$-	\$-	\$-
2.3	Strip and Dispose Top Soil	1,613	CY		24.50	10.50	\$-	\$39,527	\$16,940	\$56,467
2.4	Site Grading- Excavation for Substation Pad	4,840	CY		9.00	6.00	\$-	\$43,560	\$29,040	\$72,600
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,614	CY		21.00	9.00	\$-	\$54,885.60	\$23,522.40	\$78,408.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,920	CY		2.40	1.60	\$-	\$9,409	\$6,273	\$15,682
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	2,614	CY	25.00	2.40	1.60	\$65,340	\$6,273	\$4,182	\$75,794
2.8	Install substation 8" pad base	4,840	SY	11.00	6.00	4.00	\$53,240	\$29,040	\$19,360	\$101,640
2.9	Site Surfacing - Aggregate 6" Thick	4,840	SY	16.50	4.50	3.00	\$79,860	\$21,780	\$14,520	\$116,160
2.10	7' Station Fence w/ Barbed Wire & Grounding	900	LF	13.85	13.85	6.92	\$12,463	\$12,463	\$6,232	\$31,158
2.11	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$16,200	\$6,490	\$2,610	\$25,300
2.12	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$5,000	\$2,000	\$700	\$7,700
2.13	Erosion Control-Silt fence install & remove	1,500	LF	2.41	3.16	0.72	\$3,615	\$4,740	\$1,080	\$9,435
2.14	Temporary fencing	1,000	LF	7.50	5.25	2.25	\$7,500	\$5,250	\$2,250	\$15,000
2.15	345kV, Cable sealing end - 3 Ph	64	CY	703.89	804.44	502.78	\$45,189	\$51,645	\$32,278	\$129,113
2.16	345kV, lighting arrester	64	CY	703.89	804.44	502.78	\$45,189	\$51,645	\$32,278	\$129,113
2.17	345kV, Cable sealing end - 3 Ph	12	EA	8,346.00	5,758.74	3,839.16	\$100,152	\$69,105	\$46,070	\$215,327
2.18	345kV, lighting arrester	12	EA	4,810.00	2,886.00	1,924.00	\$57,720	\$34,632	\$23,088	\$115,440
2.19	AL Bus Tubing, 5" SCH 80	420	LF	25.00	184.94	123.29	\$10,500	\$77,674	\$51,783	\$139,957
2.20	AL Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$12,600	\$12,600	\$6,300	\$31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	267	LF	2.09	-	-	\$558	\$-	\$-	\$558
2.22	Caweld, DSA, 4/0 , T, CROSS	133	EA	165.00	75.00		\$22,000	\$10,000	\$-	\$32,000
2.23	Ground Rod, 3/4" x 15'	36	EA	135.00	67.50	7.50	\$4,860	\$2,430	\$270	\$7,560
2.24	Trench Box Shoring (Vault)	8	EA	\$-	18,079	\$27,119	\$-	\$144,633	\$216,949	\$361,582
2.25	Splice Vault Excavation	5,177	CY		\$17.5	\$7.5	\$-	\$90,596	\$38,827	\$129,422

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.26	Splice Vault Supply & Installation	8	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 364,000	\$ 171,600	\$ 400,400	\$ 936,000
2.27	Splice Vault Backfill	1,553	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,743	\$ 9,318	\$ 31,061
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	4,711	CY		\$ 24.5	\$ 10.5	\$ -	\$ 115,419	\$ 49,465	\$ 164,884
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	5,177	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,177	\$ 2,588	\$ 7,765
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 920,987	\$ 1,160,115	\$ 1,105,523	\$ 3,186,625
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 117,900,548	\$ 105,889,759	\$ 72,268,707	\$ 296,059,014
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		11,842,360.55		\$ -	\$ 11,842,361	\$ -	\$ 11,842,361
3.4	Utility PM and Project Oversight	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.5	Site Accommodation, Facilities, Storage	1	LS	2,960,590.14			\$ 2,960,590	\$ -	\$ -	\$ 2,960,590
	Engineering									
3.6	Design Engineering	1	LS		\$ 14,802,951		\$ -	\$ 14,802,951	\$ -	\$ 14,802,951
3.7	Surveying/Staking	1	LS		\$ 2,072,413		\$ -	\$ 2,072,413	\$ -	\$ 2,072,413
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,960,590		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 888,177		\$ -	\$ 888,177	\$ -	\$ 888,177
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 842,480	\$ -	\$ -	\$ 842,480	\$ 842,480
3.15	Legal Fees (Real estate)	1.00	LS		-	25,274.40	\$ -	\$ -	\$ 25,274	\$ 25,274
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 117,900,548			\$ 10,375,248	\$ -	\$ -	\$ 10,375,248
3.21	Contractor Permits	1	LS		\$ 296,059		\$ -	\$ 296,059	\$ -	\$ 296,059
3.22	Payment & Performance Bond	1	LS			\$ 10,480,000	\$ -	\$ -	\$ 10,480,000	\$ 10,480,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,335,838	\$ 46,001,031	\$ 15,365,954	\$ 74,702,824

Comp 18. New Rochelle Landing to Northport Landing 345kV Offshore Submarine Cables - Single circuit
EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 165,374,873	\$ 140,494,560	\$ 91,110,953	\$ 396,980,386
2. TRANSITION STATION	\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 18,573,591	\$ 59,107,213	\$ 18,114,495	\$ 95,795,299
SUBTOTAL (Costs):	\$ 184,364,814	\$ 200,166,013	\$ 109,660,755	\$ 494,191,582
CONTRACTOR MARK-UP (OH&P)	\$ 33,185,667	\$ 36,029,882	\$ 19,738,936	\$ 88,954,485
SUBTOTAL:	\$ 217,550,481	\$ 236,195,896	\$ 129,399,691	\$ 583,146,067
CONTINGENCY ON ENTIRE PROJECT	\$ 43,510,096	\$ 47,239,179	\$ 25,879,938	\$ 116,629,213
TOTAL:	\$ 261,060,577	\$ 283,435,075	\$ 155,279,629	\$ 699,775,281

Comp18 NR-NP Landing 345KV

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	388	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,436	\$ 2,330	\$ 7,765
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	1,178	CY		\$ 24.5	\$ 10.5	\$ -	\$ 28,855	\$ 12,366	\$ 41,221
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	1,294	CF		\$ 1.0	\$ 0.5	\$ -	\$ 1,294	\$ 647	\$ 1,941
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 165,791,224	\$ 141,058,800	\$ 91,546,260	\$ 398,396,284
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,983,962.84		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		15,935,851.34		\$ -	\$ 15,935,851	\$ -	\$ 15,935,851
3.4	Utility PM and Project Oversight	1	LS		3,983,962.84		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.5	Site Accommodation, Facilities, Storage	1	LS	3,983,962.84			\$ 3,983,963	\$ -	\$ -	\$ 3,983,963
	Engineering									
3.6	Design Engineering	1	LS		\$ 19,919,814		\$ -	\$ 19,919,814	\$ -	\$ 19,919,814
3.7	Surveying/Staking	1	LS		\$ 2,788,774		\$ -	\$ 2,788,774	\$ -	\$ 2,788,774
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,983,963		\$ -	\$ 3,983,963	\$ -	\$ 3,983,963
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 1,195,189		\$ -	\$ 1,195,189	\$ -	\$ 1,195,189
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 112,908	\$ -	\$ -	\$ 112,908	\$ 112,908
3.15	Legal Fees (Real estate)	1.00	LS		-	3,387.24	\$ -	\$ -	\$ 3,387	\$ 3,387
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 165,791,224			\$ 14,589,628	\$ -	\$ -	\$ 14,589,628
3.21	Contractor Permits	1	LS		\$ 398,396		\$ -	\$ 398,396	\$ -	\$ 398,396
3.22	Payment & Performance Bond	1	LS			\$ 13,980,000	\$ -	\$ -	\$ 13,980,000	\$ 13,980,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 18,573,591	\$ 59,107,213	\$ 18,114,495	\$ 95,795,299

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NEXTera Energy- TO40 Core 5

Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit

(EGC To Sprain Brook 345 kV)

Total: \$210,271,720

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,537,664	\$ 12,454,558	\$ 4,987,906	\$ 19,980,128
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618
SUBTOTAL (Costs):	\$ 55,280,235	\$ 62,197,429	\$ 31,019,314	\$ 148,496,978
CONTRACTOR MARK-UP (OH&P)	\$ 9,950,442	\$ 11,195,537	\$ 5,583,476	\$ 26,729,456
SUBTOTAL:	\$ 65,230,678	\$ 73,392,966	\$ 36,602,790	\$ 175,226,434
CONTINGENCY ON ENTIRE PROJECT	\$ 13,046,136	\$ 14,678,593	\$ 7,320,558	\$ 35,045,287
TOTAL:	\$ 78,276,813	\$ 88,071,559	\$ 43,923,348	\$ 210,271,720

Description of Work: East Garden City - Hempstead Harbor Landing (Shore Road, single circuits). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,147,000	\$ 3,063,000	\$ 10,210,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	53,909	LF	\$ 30	\$ 18	\$ 12	\$ 1,617,264	\$ 970,358	\$ 646,906	\$ 3,234,528
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	10.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 408,400	\$ 1,225,200	\$ 408,400	\$ 2,042,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,537,664	\$ 12,454,558	\$ 4,987,906	\$ 19,980,128
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.21	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,427,358	\$ 951,572	\$ 2,378,930
2.2	Formwork in Trench	351,053	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 702,106	\$ 526,579	\$ 175,526	\$ 1,404,211
2.3	Trench Excavation	29,254	CY		\$ 17.5	\$ 7.5	\$ -	\$ 511,952	\$ 219,408	\$ 731,360
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,828	SF	\$ 50	\$ 25	\$ 14	\$ 91,420	\$ 44,796	\$ 25,598	\$ 161,813
2.5	Supply & Install Thermal Backfill	15,359	CY	\$ 350	\$ 245	\$ 105	\$ 5,375,496	\$ 3,762,847	\$ 1,612,649	\$ 10,750,992
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,150	CY	\$ 200	\$ 125	\$ 50	\$ 1,430,053	\$ 893,783	\$ 357,513	\$ 2,681,349
2.9	Conduit 8" SCH 40PVC	215,635	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 6,167,167	\$ 1,222,652	\$ 523,994	\$ 7,913,812
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	107,818	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 379,518	\$ 339,625	\$ 145,554	\$ 864,697
2.12	Warning Tape	107,818	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 16,173	\$ 26,954	\$ 10,782	\$ 53,909
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	4,987	CY		\$ 17.5	\$ 7.5	\$ -	\$ 87,267	\$ 37,400	\$ 124,667
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	1,496	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,944	\$ 8,976	\$ 29,920
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	323,453	LF			\$ 0.25	\$ -	\$ -	\$ 80,863	\$ 80,863
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,093	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 239,299	\$ 239,299	\$ 119,650	\$ 598,248

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 106,260	\$ 111,573	\$ 47,817	\$ 265,651
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	72	EA		\$ 400	\$ 1,200	\$ -	\$ 28,601	\$ 85,803	\$ 114,404
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	72	EA		\$ 10	\$ 15	\$ -	\$ 715	\$ 1,073	\$ 1,788
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,434	\$ 184,303	\$ 245,737
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	42,569	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,042,930	\$ 446,970	\$ 1,489,901
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	34,241	CF		\$ 1.0	\$ 0.5	\$ -	\$ 34,241	\$ 17,121	\$ 51,362
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	56,604	FT	\$ 7	\$ 3	\$ 2	\$ 418,702	\$ 188,526	\$ 125,684	\$ 732,912
3.12	Ground Continuity Conductor	56,604	FT	\$ 13	\$ 8	\$ 5	\$ 738,063	\$ 426,060	\$ 284,040	\$ 1,448,163
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 49,688,907	\$ 43,412,704	\$ 24,793,749	\$ 117,895,360
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,046,194	\$ 1,364,129	\$ -	\$ 2,046,194	\$ 1,364,129	\$ 3,410,323
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.3	Construction Project Management / Supervision	1	LS		4,715,814.38		\$ -	\$ 4,715,814	\$ -	\$ 4,715,814
4.4	Utility PM and Project Oversight	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.5	Site Accommodation, Facilities, Storage	1	LS	1,178,953.60			\$ 1,178,954	\$ -	\$ -	\$ 1,178,954
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,894,768	\$ -	\$ -	\$ 5,894,768	\$ -	\$ 5,894,768
4.7	LiDAR /GPR	1.0	LS		\$ 212,212	\$ 141,474	\$ -	\$ 212,212	\$ 141,474	\$ 353,686
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 495,161	\$ 330,107	\$ -	\$ 495,161	\$ 330,107	\$ 825,268
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,178,954		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 353,686		\$ -	\$ 353,686	\$ -	\$ 353,686
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 50,426	\$ -	\$ -	\$ 50,426	\$ 50,426
4.16	Legal Fees (Real estate)	1.00	LS		-	1,512.78	\$ -	\$ -	\$ 1,513	\$ 1,513
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,200,000	\$ -	\$ -	\$ 4,200,000	\$ 4,200,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 49,688,906.93			\$ 4,412,375	\$ -	\$ -	\$ 4,412,375
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 117,895	\$ -	\$ -	\$ 117,895	\$ 117,895
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618

		<u>NEXtera Energy- TO40 Core 5</u>	
		<u>Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit</u>	
		<u>(Ruland To Sprain Brook 345 kV)</u>	
1	Total:	\$	349,868,481

NEXtera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274
SUBTOTAL (Costs):	\$ 90,427,881	\$ 103,561,178	\$ 53,093,201	\$ 247,082,261
CONTRACTOR MARK-UP (OH&P)	\$ 16,277,019	\$ 18,641,012	\$ 9,556,776	\$ 44,474,807
SUBTOTAL:	\$ 106,704,900	\$ 122,202,190	\$ 62,649,977	\$ 291,557,067
CONTINGENCY ON ENTIRE PROJECT	\$ 21,340,980	\$ 24,440,438	\$ 12,529,995	\$ 58,311,413
TOTAL:	\$ 128,045,880	\$ 146,642,628	\$ 75,179,973	\$ 349,868,481

Description of Work: Ruland - Hempstead Harbor Landing (Shore Road, single circuit). 5000 kcmil copper XLPE, single cable per phase..										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	15.89	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 11,120,200	\$ 4,765,800	\$ 15,886,000
1.3	Flaggers	500	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 800,000	\$ 2,400,000	\$ 800,000	\$ 4,000,000
1.4	K Rail / Lane Control / Metal Plates	83,878	LF	\$ 30	\$ 18	\$ 12	\$ 2,516,342	\$ 1,509,805	\$ 1,006,537	\$ 5,032,685
1.5	Police Support	20,000.0	HR		\$ 120	\$ 27	\$ -	\$ 2,400,000	\$ 540,000	\$ 2,940,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	15.89	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 635,440	\$ 1,906,320	\$ 635,440	\$ 3,177,200
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	15.89	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,220,863	\$ 1,480,575	\$ 3,701,438
2.2	Formwork in Trench	643,225	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,286,449	\$ 964,837	\$ 321,612	\$ 2,572,899
2.3	Trench Excavation	53,602	CY		\$ 17.5	\$ 7.5	\$ -	\$ 938,036	\$ 402,015	\$ 1,340,051
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,350	SF	\$ 50	\$ 25	\$ 14	\$ 167,506	\$ 82,078	\$ 46,902	\$ 296,486
2.5	Supply & Install Thermal Backfill	28,141	CY	\$ 350	\$ 245	\$ 105	\$ 9,849,377	\$ 6,894,564	\$ 2,954,813	\$ 19,698,755
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,101	CY	\$ 200	\$ 125	\$ 50	\$ 2,620,247	\$ 1,637,654	\$ 655,062	\$ 4,912,963
2.9	Conduit 8" SCH 40PVC	335,512	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 9,595,652	\$ 1,902,355	\$ 815,295	\$ 12,313,302
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	167,756	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 590,502	\$ 528,432	\$ 226,471	\$ 1,345,404
2.12	Warning Tape	167,756	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 25,163	\$ 41,939	\$ 16,776	\$ 83,878
2.13	Trench Box Shoring (Vault)	49	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 885,876	\$ 1,328,814	\$ 2,214,689
2.14	Splice Vault Excavation	8,145	CY		\$ 17.5	\$ 7.5	\$ -	\$ 142,536	\$ 61,087	\$ 203,622
2.15	Splice Vault Supply & Installation	49	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,715,000	\$ 808,500	\$ 1,886,500	\$ 4,410,000
2.16	Splice Vault Backfill	2,443	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,209	\$ 14,661	\$ 48,869
2.17	Jack and Bore along Route	805	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 644,000	\$ 1,288,000	\$ 1,288,000	\$ 3,220,000
2.18	HDD along Route	1,200	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 960,000	\$ 1,920,000	\$ 1,920,000	\$ 4,800,000
2.19	Air Test Ducts	503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LiDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 29,120	\$ 43,680	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXTera Energy- TO40 Core 5

Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits

1Total: \$ 133,317,472

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576
SUBTOTAL (Costs):	\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757
CONTRACTOR MARK-UP (OH&P)	\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136
SUBTOTAL:	\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893
CONTINGENCY ON ENTIRE PROJECT	\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579
TOTAL:	\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472

Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversight	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LiDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXTera Energy- TO40 Core 5

Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

1Total: \$ 394,231,294

NEXTera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,215.67
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	\$ -	\$ 1,492	\$ 2,239	\$ 3,731
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kv 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kv 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kv 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kv 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kv 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kv 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kv 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kv 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kv 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kv Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kv)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LIDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

NEXtera Energy- TO40 Core 5

Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit

1Total: \$ 232,454,478

NEXtera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126
SUBTOTAL (Costs):	\$ 59,773,498	\$ 69,663,101	\$ 34,726,168	\$ 164,162,767
CONTRACTOR MARK-UP (OH&P)	\$ 10,759,230	\$ 12,539,358	\$ 6,250,710	\$ 29,549,298
SUBTOTAL:	\$ 70,532,728	\$ 82,202,459	\$ 40,976,879	\$ 193,712,065
CONTINGENCY ON ENTIRE PROJECT	\$ 14,106,546	\$ 16,440,492	\$ 8,195,376	\$ 38,742,413
TOTAL:	\$ 84,639,274	\$ 98,642,950	\$ 49,172,254	\$ 232,454,478

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 113 - Jamaica to East Garden City 138kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.59	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	480,266	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 960,531	\$ 720,398	\$ 240,133	\$ 1,921,062
2.3	Trench Excavation	40,022	CY		\$ 17.5	\$ 7.5	\$ -	\$ 700,387	\$ 300,166	\$ 1,000,553
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,501	SF	\$ 50	\$ 25	\$ 14	\$ 125,069	\$ 61,284	\$ 35,019	\$ 221,372
2.5	Supply & Install Thermal Backfill	21,012	CY	\$ 350	\$ 245	\$ 105	\$ 7,354,067	\$ 5,147,847	\$ 2,206,220	\$ 14,708,134
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY	\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,782	CY	\$ 200	\$ 125	\$ 50	\$ 1,956,415	\$ 1,222,760	\$ 489,104	\$ 3,668,279
2.9	Conduit 8" SCH 40PVC	244,781	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 7,000,731	\$ 1,387,907	\$ 594,817	\$ 8,983,455
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	122,390	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 430,814	\$ 385,530	\$ 165,227	\$ 981,571
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 30,598	\$ 12,239	\$ 61,195
2.13	Trench Box Shoring (Vault)	38	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 687,006	\$ 1,030,508	\$ 1,717,514
2.14	Splice Vault Excavation	5,202	CY		\$ 17.5	\$ 7.5	\$ -	\$ 91,031	\$ 39,013	\$ 130,044
2.15	Splice Vault Supply & Installation	38	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,330,000	\$ 627,000	\$ 1,463,000	\$ 3,420,000
2.16	Splice Vault Backfill	1,561	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,847	\$ 9,363	\$ 31,211
2.17	Jack and Bore along Route	250	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 200,000	\$ 400,000	\$ 400,000	\$ 1,000,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	367,171	LF			\$ 0.25	\$ -	\$ -	\$ 91,793	\$ 91,793
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	22,979	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 321,707	\$ 321,707	\$ 160,854	\$ 804,269
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,383	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 142,853	\$ 149,996	\$ 64,284	\$ 357,134
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	98	EA		\$ 400	\$ 1,200	\$ -	\$ 39,128	\$ 117,385	\$ 156,513

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	98	EA		\$ 10	\$ 15	\$ -	\$ 978	\$ 1,467	\$ 2,446
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	210	EA		\$ 400	\$ 1,200	\$ -	\$ 84,046	\$ 252,139	\$ 336,186
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	56,762	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,390,679	\$ 596,005	\$ 1,986,684
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	38	EA			\$ 4,000	\$ -	\$ -	\$ 152,000	\$ 152,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	45,224	CF		\$ 1.0	\$ 0.5	\$ -	\$ 45,224	\$ 22,612	\$ 67,836
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	114	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 672,372	\$ 1,122,499	\$ 320,714	\$ 2,115,585
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	38	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 1,013,042	\$ 607,825	\$ 405,217	\$ 2,026,084
3.11	Fiber Optic Cable	64,255	FT	\$ 7	\$ 3	\$ 2	\$ 475,294	\$ 214,008	\$ 142,672	\$ 831,973
3.12	Ground Continuity Conductor	64,255	FT	\$ 13	\$ 8	\$ 5	\$ 837,820	\$ 483,647	\$ 322,431	\$ 1,643,899
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 53,699,423	\$ 48,982,817	\$ 27,874,401	\$ 130,556,641
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,305,717	\$ 1,537,144	\$ -	\$ 2,305,717	\$ 1,537,144	\$ 3,842,861
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.3	Construction Project Management / Supervision	1	LS		5,222,265.65		\$ -	\$ 5,222,266	\$ -	\$ 5,222,266
4.4	Utility PM and Project Oversight	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.5	Site Accommodation, Facilities, Storage	1	LS	1,305,566.41			\$ 1,305,566	\$ -	\$ -	\$ 1,305,566
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,527,832	\$ -	\$ -	\$ 6,527,832	\$ -	\$ 6,527,832
4.7	LiDAR /GPR	1.0	LS		\$ 235,002	\$ 156,668	\$ -	\$ 235,002	\$ 156,668	\$ 391,670
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 548,338	\$ 365,559	\$ -	\$ 548,338	\$ 365,559	\$ 913,896
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,305,566		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 391,670		\$ -	\$ 391,670	\$ -	\$ 391,670
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,640,000	\$ -	\$ -	\$ 4,640,000	\$ 4,640,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 53,699,423.07			\$ 4,768,509	\$ -	\$ -	\$ 4,768,509
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 130,557	\$ -	\$ -	\$ 130,557	\$ 130,557
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126

NEXtera Energy- TO40 Core 5

Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit

1Total: \$5,354,910

NEXtera Energy- TO40 Core 5				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$103,680	\$467,008	\$139,872	\$710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$350,497	\$277,908	\$192,142	\$820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$516,796	\$366,133	\$210,329	\$1,093,258
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$112,466	\$890,875	\$154,010	\$1,157,351
SUBTOTAL (Costs):	\$1,083,440	\$2,001,924	\$696,353	\$3,781,716
CONTRACTOR MARK-UP (OH&P)	\$195,019	\$360,346	\$125,343	\$680,709
SUBTOTAL:	\$1,278,459	\$2,362,270	\$821,696	\$4,462,425
CONTINGENCY ON ENTIRE PROJECT	\$255,692	\$472,454	\$164,339	\$892,485
TOTAL:	\$1,534,151	\$2,834,724	\$986,035	\$5,354,910

Description of Work: Rebuild 0.2 mile of UG line (trench, conduits and cable), single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$-	\$-	\$-	\$-	\$-	\$-	\$-
1.2	Existing Utility Conflict and Relocation	0.20	Mile				\$-	\$-	\$-	\$-
1.3	Flaggers	40	DAY	\$1,600	\$4,800	\$1,600	\$64,000	\$192,000	\$64,000	\$320,000
1.4	K Rail / Lane Control / Metal Plates	1,056	LF	\$30	\$18	\$12	\$31,680	\$19,008	\$12,672	\$63,360
1.5	Police Support	1,600.0	HR		\$120	\$27	\$-	\$192,000	\$43,200	\$235,200
1.6	Additional Traffic Management		LS				\$-	\$-	\$-	\$-
1.7	Access / Clearing Costs		LS				\$-	\$-	\$-	\$-
1.8	Snow Removal	40.0	DAY		\$1,000	\$300	\$-	\$40,000	\$12,000	\$52,000
1.9	Existing Utility Protection	0.20	Mile	\$40,000	\$120,000	\$40,000	\$8,000	\$24,000	\$8,000	\$40,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$103,680	\$467,008	\$139,872	\$710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.20	Miles		\$139,800	\$93,200	\$-	\$27,960	\$18,640	\$46,600
2.2	Formwork in Trench	8,256	SF	\$2	\$1.5	\$0.5	\$16,512	\$12,384	\$4,128	\$33,024
2.3	Trench Excavation	688	CY		\$17.5	\$7.5	\$-	\$12,040	\$5,160	\$17,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	43	SF	\$50	\$25	\$14	\$2,150	\$1,054	\$602	\$3,806
2.5	Supply & Install Thermal Backfill	361	CY	\$350	\$245	\$105	\$126,420	\$88,494	\$37,926	\$252,840
2.6	Supply & Install Concrete Cap (6")	0	CY	\$200	\$125	\$50	\$-	\$-	\$-	\$-
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$14.0	\$6.0	\$-	\$-	\$-	\$-
2.8	Supply & Install Ductbank Concrete	168	CY	\$200	\$125	\$50	\$33,632	\$21,020	\$8,408	\$63,060
2.9	Conduit 8" SCH 40PVC	4,224	LF	\$28.6	\$5.7	\$2.4	\$120,806	\$23,950	\$10,264	\$155,021
2.10	Conduit 4" SCH 40PVC	0	LF	\$9.8	\$4.20	\$1.8	\$-	\$-	\$-	\$-
2.11	Conduit 2" SCH 40PVC	2,112	LF	\$3.5	\$3.15	\$1.4	\$7,434	\$6,653	\$2,851	\$16,938
2.12	Warning Tape	2,112	LF	\$0.15	\$0.25	\$0.10	\$317	\$528	\$211	\$1,056
2.13	Trench Box Shoring (Vault)	1	EA	\$-	\$18,079	\$27,119	\$-	\$18,079	\$27,119	\$45,198
2.14	Splice Vault Excavation	137	CY		\$17.5	\$7.5	\$-	\$2,396	\$1,027	\$3,422
2.15	Splice Vault Supply & Installation	1	EA	\$35,000	\$16,500	\$38,500	\$35,000	\$16,500	\$38,500	\$90,000
2.16	Splice Vault Backfill	41	CY		\$14.0	\$6.0	\$-	\$575	\$246	\$821
2.17	Jack and Bore along Route	0	LF	\$800	\$1,600	\$1,600	\$-	\$-	\$-	\$-
2.18	HDD along Route	0	LF	\$800	\$1,600	\$1,600	\$-	\$-	\$-	\$-
2.19	Air Test Ducts	6,336	LF			\$0.25	\$-	\$-	\$1,584	\$1,584
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$14.00	\$14.00	\$7.00	\$5,696	\$5,696	\$2,848	\$14,241
2.21	PVMT, AGGREGATE, 10", BASE COURSE	113	CY	\$22.38	\$23.50	\$10.07	\$2,529	\$2,656	\$1,138	\$6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$400	\$1,200	\$-	\$673	\$2,018	\$2,691
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$10	\$15	\$-	\$17	\$25	\$42

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LiDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

NEXTera Energy- TO40 Core 5

Other Comp. 138kV Upgrades

1Total: \$ 16,870,335

Other Comp. 138kV Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Comp. 138kV Upgrades				
1. West Bus-Kings CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378
CONTRACTOR MARK-UP (OH&P)	\$ 829,380	\$ 872,432	\$ 442,722	\$ 2,144,534
SUBTOTAL:	\$ 5,437,050	\$ 5,719,276	\$ 2,902,287	\$ 14,058,612
CONTINGENCY ON ENTIRE PROJECT	\$ 1,087,410	\$ 1,143,855	\$ 580,457	\$ 2,811,722
TOTAL:	\$ 6,524,459	\$ 6,863,131	\$ 3,482,744	\$ 16,870,335

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1. West Bus-Kings CT Upgrade										
1.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
1.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
1.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
							\$ -	from	\$ -	\$ -
TOTAL - West Bus-Kings-Pilgrim CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,155,935.10	\$ 2,096,798.80	\$ 2,015,966.10	\$ 8,268,700.00

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 123,383	\$ 82,255	\$ -	\$ 123,383	\$ 82,255	\$ 205,638
Project Management, Material Handling & Amenities										
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.3	Construction Project Management / Supervision	1	LS		330,748.00		\$ -	\$ 330,748	\$ -	\$ 330,748
4.4	Utility PM and Project Oversight	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.5	Site Accommodation, Facilities, Storage	1	LS	82,687.00			\$ 82,687	\$ -	\$ -	\$ 82,687
Engineering										
4.6	Design Engineering	1.00	LS		\$ 413,435	\$ -	\$ -	\$ 413,435	\$ -	\$ 413,435
4.7	LiDAR	1.00	LS		\$ 14,884	\$ 9,922	\$ -	\$ 14,884	\$ 9,922	\$ 24,806
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,729	\$ 23,152	\$ -	\$ 34,729	\$ 23,152	\$ 57,881
Testing & Commissioning										
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
Permitting and Additional Costs										
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,687		\$ -	\$ 82,687	\$ -	\$ 82,687
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,806		\$ -	\$ 24,806	\$ -	\$ 24,806
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 320,000	\$ -	\$ -	\$ 320,000	\$ 320,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,155,935.10			\$ 369,047	\$ -	\$ -	\$ 369,047
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,269	\$ -	\$ -	\$ 8,269	\$ 8,269
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378

NEXTera Energy- TO40 Core 5	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO40 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable.
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
42	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 3 circuits, 2 cable per circuit, so there are 6 passes.
43	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications -	
44	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
45	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
46	Substation pad is based on 8" base and 6" surfacing rock.
47	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
48	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
49	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
50	All substation segments construction period is based on milestone schedule provided

NEXtera Energy- TO41 Core 6		
REVISION 1		
NEXtera Energy- TO41 Core 6 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 54,287,315
Direct Labor, Material & Equipment Costs	2.Station 31 East Garden City 345/138 kV Substation Upgrades	\$ 158,123,262
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,095,138
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 318,036,771
Direct Labor, Material & Equipment Costs	12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$ 316,467,326
Direct Labor, Material & Equipment Costs	13- Station 30a New Northport HVDC 1200MW Converter Station	\$ 316,424,093
Direct Labor, Material & Equipment Costs	14 - Northport 138kV GIS Substation	\$ 25,174,983
Direct Labor, Material & Equipment Costs	15.Pilgrim 138kV Substation Upgrades	\$ 1,090,486
Direct Labor, Material & Equipment Costs	16. Existing Ruland Road 138 kV Substation Upgrades	\$ 1,077,395
Direct Labor, Material & Equipment Costs	17. Existing East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 1,455,994,016
CONTRACTOR MARK-UP (OH&P)		\$ 172,825,323
SUBTOTAL (AFTER MU):		\$ 1,628,819,338
CONTINGENCY ON ENTIRE PROJECT		\$ 325,763,868
Substation TOTAL:		\$ 1,954,583,206
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Single circuit(Ruland To Sprain Brook 345 kV)	\$ 107,007,205
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit(Northport To Sprain Brook 320 kV DC)	\$ 89,348,530
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Two circuits (two lines, single circuit each) EGC-Dunwoodie 345KV / Ruland-SprainBrook 345KV	\$ 296,059,014
Direct Labor, Material & Equipment Costs	Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuitNorthport-SprainBrook 320KV DC	\$ 302,256,116
Direct Labor, Material & Equipment Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit(EGC To Dunwoodie 345 kV)	\$ 117,895,360
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit(Pilgram to Northport kV)	\$ 93,067,293
Direct Labor, Material & Equipment Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit(EGC-Jamaica 138kv)	\$ 130,556,641
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 8,268,700
SUBTOTAL (Costs):		\$ 1,775,761,238
CONTRACTOR MARK-UP (OH&P)		\$ 319,637,023
SUBTOTAL (AFTER MU):		\$ 2,095,398,261
CONTINGENCY ON ENTIRE PROJECT		\$ 419,079,652
Transmission Line TOTAL:		\$ 2,514,477,913
NEXtera Energy- TO41 Core 6Total Direct Cost		\$ 4,469,061,119

NEXtera Energy- TO41 Core 6 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 15,736,579
Indirect Costs	2.Station 31 East Garden City 345/138 kV Substation Upgrades	\$ 76,129,096
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 334,752
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 97,705,743
Indirect Costs	12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$ 35,329,140
Indirect Costs	13- Station 30a New Northport HVDC 1200MW Converter Station	\$ 30,991,771
Indirect Costs	14 - Northport 138kV GIS Substation	\$ 4,620,516
Indirect Costs	15.Pilgrim 138kV Substation Upgrades	\$ 347,380
Indirect Costs	16. Existing Ruland Road 138 kV Substation Upgrades	\$ 356,246
Indirect Costs	17. Existing East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 338,687,512
CONTRACTOR MARK-UP (OH&P)		\$ 60,963,752
SUBTOTAL (AFTER MU):		\$ 399,651,264
CONTINGENCY ON ENTIRE PROJECT		\$ 79,930,253
Substation TOTAL:		\$ 479,581,517
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Single circuit(Ruland To Sprain Brook 345 kV)	\$ 27,419,655
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit(Northport To Sprain Brook 320 kV DC)	\$ 23,027,188
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Two circuits (two lines, single circuit each) EGC-Dunwoodie 345KV / Ruland-SprainBrook 345KV	\$ 74,702,824
Indirect Costs	Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-SprainBrook 320KV DC	\$ 71,261,605
Indirect Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit(EGC To Dunwoodie 345 kV)	\$ 30,601,618
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)	\$ 50,420,274
Indirect Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit(Pilgram to Northport kV)	\$ 23,919,365
Indirect Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit(EGC-Jamaica 138kv)	\$ 33,606,126
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,645,378
SUBTOTAL (Costs):		\$ 449,532,820
CONTRACTOR MARK-UP (OH&P)		\$ 80,915,908
SUBTOTAL (AFTER MU):		\$ 530,448,728
CONTINGENCY ON ENTIRE PROJECT		\$ 106,089,746
Transmission Line TOTAL:		\$ 636,538,473
NEXtera Energy- TO41 Core 6 Total Indirect Cost		\$ 1,116,119,990
NEXtera Energy- TO41 Core 6 Total		\$ 5,585,181,109

NEXTera Energy- TO41 Core 6

1. Station 29 New Ruland Road 345/138 kV Substation

Total: \$ 97,499,274

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736
2. SUBSTATION FOUNDATIONS	\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,219
3. SUBSTATION STRUCTURES	\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495
4. MAJOR EQUIPTMENT	\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278
5. LOW VOLTAGE & CONTROL CABLE	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
6. CONDUIT & CABLE TRENCH	\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,296
7. GROUND GRID	\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,314
8. CONTROL ENCLOSURE	\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,858
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 29,397,161	\$ 19,987,089	\$ 9,149,644	\$ 58,533,894
SUBTOTAL (Costs):	\$ 35,142,161	\$ 23,434,089	\$ 11,447,644	\$ 70,023,894
CONTRACTOR MARK-UP (OH&P)	\$ 5,636,189	\$ 3,804,496	\$ 1,784,816	\$ 11,225,501
SUBTOTAL:	\$ 40,778,350	\$ 27,238,585	\$ 13,232,460	\$ 81,249,395
CONTINGENCY ON ENTIRE PROJECT	\$ 8,155,670	\$ 5,447,717	\$ 2,646,492	\$ 16,249,879
TOTAL:	\$ 48,934,020	\$ 32,686,303	\$ 15,878,952	\$ 97,499,274

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1. Station 29 New Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 37,800	\$ 25,200	\$ 63,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	5,647	CY		24.50	10.50	\$ -	\$ 138,343	\$ 59,290	\$ 197,633
1.5	Site Grading- Excavation for Substation Pad	16,940	CY		9.00	6.00	\$ -	\$ 152,460	\$ 101,640	\$ 254,100
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	9,148	CY		21.00	9.00	\$ -	\$ 192,099.60	\$ 82,328.40	\$ 274,428.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	13,721	CY		2.40	1.60	\$ -	\$ 32,931	\$ 21,954	\$ 54,886
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	9,148	CY	25.00	2.40	1.60	\$ 228,690	\$ 21,954	\$ 14,636	\$ 265,280
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	16,940	SY	11.00	6.00	4.00	\$ 186,340	\$ 101,640	\$ 67,760	\$ 355,740
1.11	Site Surfacing - Aggregate 6" Thick	16,940	SY	16.50	4.50	3.00	\$ 279,510	\$ 76,230	\$ 50,820	\$ 406,560
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,439	LF	13.85	13.85	6.92	\$ 19,927	\$ 19,927	\$ 9,964	\$ 49,818
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	11,952	SF	1.50	1.50	1.00	\$ 17,928	\$ 17,928	\$ 11,952	\$ 47,808
1.17	Erosion Control-Silt fence install & remove	2,700	LF	2.41	3.16	0.72	\$ 6,507	\$ 8,532	\$ 1,944	\$ 16,983
1.18	Temporary fencing	1,800	LF	7.50	5.25	2.25	\$ 13,500	\$ 9,450	\$ 4,050	\$ 27,000
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.10	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.11	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.12	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.13	345/138KV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,219
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	15	EA	4,810.00	2,886.00	1,924.00	\$ 72,150	\$ 43,290	\$ 28,860	\$ 144,300
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.10	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.11	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.12	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.20	AL. Bus fittings	1	LS	22,500.00	22,500.00	11,250.00	\$ 22,500	\$ 22,500	\$ 11,250	\$ 56,250
3.21	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495
4. MAJOR EQUIPMENT										
4.1	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
4.3	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.4	345/138KV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800
4.5	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.6	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	37,500	LF	5.30	1.43	0.29	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,750	LF	11.15	10.80	5.40	\$ 75,263	\$ 72,900	\$ 36,450	\$ 184,613
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.14	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,296
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,705	LF	2.09	3.42	1.46	\$ 26,566	\$ 43,391	\$ 18,596	\$ 88,554
7.2	Caweld, DSA, 4/0 , T, CROSS	351	EA	165.00	75.00		\$ 57,915	\$ 26,325	\$ -	\$ 84,240
7.3	Ground Rod, 3/4" x 15'	312	EA	135.00	67.50	7.50	\$ 42,120	\$ 21,060	\$ 2,340	\$ 65,520
TOTAL - GROUND GRID							\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,314
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.15	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,858
1. Station 29 New Ruland Road 345/138 kV Substation							\$ 31,906,422	\$ 14,324,879	\$ 8,056,013	\$ 54,287,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		582,256.23	249,538.38	\$ -	\$ 582,256	\$ 249,538	\$ 831,795
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,711,892.59		\$ -	\$ 1,711,893	\$ -	\$ 1,711,893
9.4	Utility PM and Project Oversight	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.5	Site Accommodation, Facilities, Storage	1	LS	427,973.15			\$ 427,973	\$ -	\$ -	\$ 427,973
	Engineering									
9.6	Design Engineering	1.00	LS		3,423,785.17		\$ -	\$ 3,423,785	\$ -	\$ 3,423,785
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		299,581.20		\$ -	\$ 299,581	\$ -	\$ 299,581
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,604,899.30		\$ -	\$ 1,604,899	\$ -	\$ 1,604,899
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		128,391.94		\$ -	\$ 128,392	\$ -	\$ 128,392
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,940,000	\$ -	\$ -	\$ 1,940,000	\$ 1,940,000
9.20	Sales Tax on Materials	8.80%	LS	31,906,422.41			\$ 2,807,765	\$ -	\$ -	\$ 2,807,765
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		54,287.31		\$ -	\$ 54,287	\$ -	\$ 54,287
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579

NEXTera Energy- TO41 Core 6

2.Station 31 East Garden City 345/138 kV Substation Upgrades

Total: \$ 326,629,659

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 31 East Garden City 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS	\$ 4,940,586	\$ 5,259,191	\$ 3,304,826	\$ 13,504,603
3. SUBSTATION STRUCTURES	\$ 1,403,520	\$ 901,180	\$ 499,166	\$ 2,803,867
4. MAJOR EQUIPTMENT	\$ 83,434,236	\$ 15,021,057	\$ 9,912,305	\$ 108,367,598
5. LOW VOLTAGE & CONTROL CABLE	\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
6. CONDUIT & CABLE TRENCH	\$ 8,724,708	\$ 4,948,997	\$ 2,709,691	\$ 16,383,397
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE	\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,565,337	\$ 26,272,726	\$ 39,291,033	\$ 76,129,096
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 99,049,709	\$ 48,374,371	\$ 51,608,278	\$ 199,032,358
SUBTOTAL (Costs):	\$ 116,659,709	\$ 58,940,371	\$ 58,652,278	\$ 234,252,358
CONTRACTOR MARK-UP (OH&P)	\$ 18,885,548	\$ 9,341,347	\$ 9,712,130	\$ 37,939,024
SUBTOTAL:	\$ 135,545,257	\$ 68,281,718	\$ 68,364,407	\$ 272,191,382
CONTINGENCY ON ENTIRE PROJECT	\$ 27,109,051	\$ 13,656,344	\$ 13,672,881	\$ 54,438,276
TOTAL:	\$ 162,654,308	\$ 81,938,062	\$ 82,037,289	\$ 326,629,659

Description of Work: New East Garden City 345 kV/138 kV GIS Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 31 East Garden City 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	166	CY	703.89	804.44	502.78	\$ 116,775	\$ 133,457	\$ 83,410	\$ 333,641
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	54	CY	703.89	804.44	502.78	\$ 37,658	\$ 43,038	\$ 26,898	\$ 107,594
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.17	345kV, Phase Angle Regulator with oil containment	890	CY	703.89	804.44	502.78	\$ 626,458	\$ 715,952	\$ 447,470	\$ 1,789,879
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.21	345kV, Surge arrester	80	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	1,885	CY	703.89	804.44	502.78	\$ 1,326,795	\$ 1,516,337	\$ 947,711	\$ 3,790,843
2.31	Precast Firewall for transformer, PARs, reactors	28,530	SF	25.00	15.00	10.00	\$ 713,250	\$ 427,950	\$ 285,300	\$ 1,426,500
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 4,940,586	\$ 5,259,191	\$ 3,304,826	\$ 13,504,603
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	15	EA	8,346.00	5,758.74	3,839.16	\$ 125,190	\$ 86,381	\$ 57,587	\$ 269,159
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	18	EA	8,346.00	5,758.74	3,839.16	\$ 150,228	\$ 103,657	\$ 69,105	\$ 322,990
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	5	EA	8,346.00	5,758.74	3,839.16	\$ 41,730	\$ 28,794	\$ 19,196	\$ 89,720
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	4,896.84	4,896.84	2,448.42	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	1,050	LF	25.00	184.94	123.29	\$ 26,250	\$ 194,185	\$ 129,457	\$ 349,892
3.20	AL. Bus fittings	1	LS	31,500.00	31,500.00	15,750.00	\$ 31,500	\$ 31,500	\$ 15,750	\$ 78,750
3.21	Steel grating and support beams-transformer moat	346,240	LB	2.73	1.17	0.50	\$ 945,864	\$ 404,755	\$ 173,466	\$ 1,524,085
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,403,520	\$ 901,180	\$ 499,166	\$ 2,803,867
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	18.00	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	15	EA	17,400.00	5,460.00	2,340.00	\$ 261,000	\$ 81,900	\$ 35,100	\$ 378,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.11	Transport & Testing- Shunt Reactor	6	EA		272,900.20	178,266.80	\$ -	\$ 1,637,401	\$ 1,069,601	\$ 2,707,002
4.12	345kV, Phase Angle Regulator with oil containment	2	EA	25,764,000.00	3,520.00	880.00	\$ 51,528,000	\$ 7,040	\$ 1,760	\$ 51,536,800
4.11	Transport & Testing- PARs	2	EA		1,215,400.00	806,600.00	\$ -	\$ 2,430,800	\$ 1,613,200	\$ 4,044,000
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	15	EA	6,669.00	5,460.00	2,340.00	\$ 100,035	\$ 81,900	\$ 35,100	\$ 217,035
4.18	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester		EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 83,434,236	\$ 15,021,057	\$ 9,912,305	\$ 108,367,598
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	16,800	LF	5.30	1.43	0.29	\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,450	LF	11.15	10.80	5.40	\$ 38,468	\$ 37,260	\$ 18,630	\$ 94,358
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
6.16										
6.17							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,724,708	\$ 4,948,997	\$ 2,709,691	\$ 16,383,397
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0 , T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	10	EA	21,328.12	17,062.49	4,265.62	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
8.4	Backup Line Relays (87L): GE L90	10	EA	21,328.12	17,062.49	4,265.62	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.22	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.23	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Generator	1	EA	130,000.00	72,000.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
2.Station 31 East Garden City 345/138 kV Substation Upgrades							\$ 106,094,372	\$ 32,667,646	\$ 19,361,244	\$ 158,123,262
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,821,011.14	780,433.35	\$ -	\$ 1,821,011	\$ 780,433	\$ 2,601,444
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,916,130.46		\$ -	\$ 4,916,130	\$ -	\$ 4,916,130
9.4	Utility PM and Project Oversight	1	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.5	Site Accommodation, Facilities, Storage	1	LS	1,229,032.62			\$ 1,229,033	\$ -	\$ -	\$ 1,229,033
	Engineering									
9.6	Design Engineering	1.00	LS		9,832,260.93		\$ -	\$ 9,832,261	\$ -	\$ 9,832,261
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		860,322.83		\$ -	\$ 860,323	\$ -	\$ 860,323
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,608,872.31		\$ -	\$ 4,608,872	\$ -	\$ 4,608,872
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		368,709.78		\$ -	\$ 368,710	\$ -	\$ 368,710
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 6,520,000	\$ -	\$ -	\$ 6,520,000	\$ 6,520,000
9.20	Sales Tax on Materials	8.80%	LS	106,094,371.82			\$ 9,336,305	\$ -	\$ -	\$ 9,336,305
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		158,123.26		\$ -	\$ 158,123	\$ -	\$ 158,123
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,565,337	\$ 26,272,726	\$ 39,291,033	\$ 76,129,096

NEXTera Energy- TO41 Core 6

3.Station 48 Valley Stream 345/138 kV Substation Upgrades

Total: \$ 143,522,216

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPTMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.Station 48 Valley Stream 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	620,000.00	415,000.00	\$ -	\$ 620,000	\$ 415,000	\$ 1,035,000
1.3	New Access Road - 20'	889	SY	4.85	7.20	4.80	\$ 4,312	\$ 6,401	\$ 4,267	\$ 14,980
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	11,761	CY		9.00	6.00	\$ -	\$ 105,849	\$ 70,566	\$ 176,415
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,057	CY		2.40	1.60	\$ -	\$ 16,937	\$ 11,291	\$ 28,228
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,704	CY	25.00	2.40	1.60	\$ 117,600	\$ 11,290	\$ 7,526	\$ 136,416
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,712	SY	11.00	6.00	4.00	\$ 95,832	\$ 52,272	\$ 34,848	\$ 182,952
1.11	Site Surfacing - Aggregate 6" Thick	8,712	SY	16.50	4.50	3.00	\$ 143,748	\$ 39,204	\$ 26,136	\$ 209,088
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,222	LF	13.85	13.85	6.92	\$ 30,770	\$ 30,770	\$ 15,385	\$ 76,926
1.13	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
1.14	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,583	LF	2.41	3.16	0.72	\$ 6,225	\$ 8,162	\$ 1,860	\$ 16,247
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	333	SY	19.50	26.00	19.50	\$ 6,500	\$ 8,667	\$ 6,500	\$ 21,667
1.20	Concrete curb	140	LF	26.00	11.70	\$ 3,640	\$	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL. Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,696.65	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

5.Dunwoodie 345 kV GIS Substation

Total: \$ 64,677,743

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
5.Dunwoodie 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS	\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT	\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID	\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE	\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 11,599,927	\$ 9,176,864	\$ 6,637,039	\$ 27,413,830
SUBTOTAL (Costs):	\$ 21,764,927	\$ 15,275,864	\$ 10,703,039	\$ 47,743,830
CONTRACTOR MARK-UP (OH&P)	\$ 2,697,887	\$ 2,017,775	\$ 1,438,627	\$ 6,154,289
SUBTOTAL:	\$ 24,462,814	\$ 17,293,639	\$ 12,141,665	\$ 53,898,119
CONTINGENCY ON ENTIRE PROJECT	\$ 4,892,563	\$ 3,458,728	\$ 2,428,333	\$ 10,779,624
TOTAL:	\$ 29,355,377	\$ 20,752,367	\$ 14,569,999	\$ 64,677,743

Description of Work: Construct a new Dunwoodie 345kV GIS substation. Loop in the Pleasantville (2) and Sprain Brook lines and connect back to the existing Dunwoodie 345kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5.Dunwoodie 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 17,137	\$ 11,425	\$ 28,562
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,263	SY	4.85	7.20	4.80	\$ 6,124	\$ 9,092	\$ 6,061	\$ 21,278
1.4	Strip and Dispose Top Soil	2,560	CY		24.50	10.50	\$ -	\$ 62,720	\$ 26,880	\$ 89,600
1.5	Site Grading- Excavation for Substation Pad	7,680	CY		9.00	6.00	\$ -	\$ 69,120	\$ 46,080	\$ 115,200
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	4,147	CY		21.00	9.00	\$ -	\$ 87,091.20	\$ 37,324.80	\$ 124,416.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	6,221	CY		2.40	1.60	\$ -	\$ 14,930	\$ 9,953	\$ 24,883
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,147	CY	25.00	2.40	1.60	\$ 103,680	\$ 9,953	\$ 6,636	\$ 120,269
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	7,680	SY	11.00	6.00	4.00	\$ 84,480	\$ 46,080	\$ 30,720	\$ 161,280
1.11	Site Surfacing - Aggregate 6" Thick	7,680	SY	16.50	4.50	3.00	\$ 126,720	\$ 34,560	\$ 23,040	\$ 184,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	864	LF	13.85	13.85	6.92	\$ 11,965	\$ 11,965	\$ 5,982	\$ 29,912
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	325,073.45	83,781.82	55,348.36	\$ 325,073	\$ 83,782	\$ 55,348	\$ 464,204
1.16	Seeding	7,296	SF	1.50	1.50	1.00	\$ 10,944	\$ 10,944	\$ 7,296	\$ 29,184
1.17	Erosion Control-Silt fence install & remove	2,100	LF	2.41	3.16	0.72	\$ 5,061	\$ 6,636	\$ 1,512	\$ 13,209
1.18	Temporary fencing	1,400	LF	7.50	5.25	2.25	\$ 10,500	\$ 7,350	\$ 3,150	\$ 21,000
1.19	Substation entrance with asphalt	486	SY	19.50	26.00	19.50	\$ 9,479	\$ 12,639	\$ 9,479	\$ 31,597
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
4.28	Transport & Testing- GIL	0	LS		-	-				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
5.Dunwoodie 345 kV GIS Substation							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931
9.4	Utility PM and Project Oversight	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733
	Engineering									
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565

NEXTera Energy- TO41 Core 6

6.Elwood 138 kV Substation Upgrades

Total: \$ 7,946,839

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPTMENT	\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563
SUBTOTAL (Costs):	\$ 3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$ 692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$ 4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$ 908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$ 5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVAr reactor (1 block) at the existitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVAr)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

NEXTera Energy- TO41 Core 6

7.Jamaica 138 kV Substation Upgrades

Total: \$ 2,024,724

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
7.Jamaica 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES	\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT	\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752
SUBTOTAL (Costs):	\$ 658,333	\$ 579,029	\$ 192,528	\$ 1,429,890
CONTRACTOR MARK-UP (OH&P)	\$ 118,500	\$ 104,225	\$ 34,655	\$ 257,380
SUBTOTAL:	\$ 776,832	\$ 683,255	\$ 227,183	\$ 1,687,270
CONTINGENCY ON ENTIRE PROJECT	\$ 155,366	\$ 136,651	\$ 45,437	\$ 337,454
TOTAL:	\$ 932,199	\$ 819,906	\$ 272,620	\$ 2,024,724

Description of Work: Add an additional terminal at the existing Jamaica 138kV substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345/138kV Gas-Insulated Bus Conductor	246	LF	550.00	275.00	82.50	\$ 135,300	\$ 67,650	\$ 20,295	\$ 223,245
4.30	345/138kV Gas-Insulated Bus Conductor-elbow	6	EA	2,500.00	1,250.00	375.00	\$ 15,000	\$ 7,500	\$ 2,250	\$ 24,750
4.31	Transport & Testing- GIL	1	LS		27,054.00	18,036.00	\$ -	\$ 27,054	\$ 18,036	\$ 45,090
TOTAL - MAJOR EQUIPMENT							\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
7.Jamaica 138 kV Substation Upgrades							\$ 595,020	\$ 355,092	\$ 145,026	\$ 1,095,138
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,504.13	7,501.77	\$ -	\$ 17,504	\$ 7,502	\$ 25,006

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,805.51		\$ -	\$ 43,806	\$ -	\$ 43,806
9.4	Utility PM and Project Oversight	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.5	Site Accommodation, Facilities, Storage	1	LS	10,951.38			\$ 10,951	\$ -	\$ -	\$ 10,951
	Engineering									
9.6	Design Engineering	1.00	LS		87,611.01		\$ -	\$ 87,611	\$ -	\$ 87,611
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,665.96		\$ -	\$ 7,666	\$ -	\$ 7,666
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		41,067.66		\$ -	\$ 41,068	\$ -	\$ 41,068
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		10,951.38		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,285.41		\$ -	\$ 3,285	\$ -	\$ 3,285
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	595,019.53			\$ 52,362	\$ -	\$ -	\$ 52,362
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,095.14		\$ -	\$ 1,095	\$ -	\$ 1,095
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752

NEXTera Energy- TO41 Core 6

8.Newbridge 345/138 kV GIS Substation Upgrades

Total: \$ 89,858,233

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPTMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION	#REF!									
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
	Engineering									
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

NEXTera Energy- TO41 Core 6

9.Rainey 345kV GIS Substation Upgrades

Total: \$ 45,946,157

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
9.Rainey 345kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID	\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE	\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 8,610,766	\$ 8,924,115	\$ 5,696,359	\$ 23,231,241
SUBTOTAL (Costs):	\$ 13,740,766	\$ 12,002,115	\$ 7,748,359	\$ 33,491,241
CONTRACTOR MARK-UP (OH&P)	\$ 1,857,738	\$ 1,791,021	\$ 1,148,465	\$ 4,797,223
SUBTOTAL:	\$ 15,598,504	\$ 13,793,136	\$ 8,896,824	\$ 38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$ 3,119,701	\$ 2,758,627	\$ 1,779,365	\$ 7,657,693
TOTAL:	\$ 18,718,205	\$ 16,551,763	\$ 10,676,189	\$ 45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.Rainey 345kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,856	\$ 5,904	\$ 14,760
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	989	SY	4.85	7.20	4.80	\$ 4,796	\$ 7,120	\$ 4,747	\$ 16,663
1.4	Strip and Dispose Top Soil	1,323	CY		24.50	10.50	\$ -	\$ 32,412	\$ 13,891	\$ 46,303
1.5	Site Grading- Excavation for Substation Pad	3,969	CY		9.00	6.00	\$ -	\$ 35,719	\$ 23,813	\$ 59,532
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,143	CY		21.00	9.00	\$ -	\$ 45,006.19	\$ 19,288.37	\$ 64,294.56
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,215	CY		2.40	1.60	\$ -	\$ 7,715	\$ 5,144	\$ 12,859
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,143	CY	25.00	2.40	1.60	\$ 53,579	\$ 5,144	\$ 3,429	\$ 62,151
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,969	SY	11.00	6.00	4.00	\$ 43,657	\$ 23,813	\$ 15,875	\$ 83,345
1.11	Site Surfacing - Aggregate 6" Thick	3,969	SY	16.50	4.50	3.00	\$ 65,485	\$ 17,860	\$ 11,906	\$ 95,251
1.12	7' Station Fence w/ Barbed Wire & Grounding	726	LF	13.85	13.85	6.92	\$ 10,054	\$ 10,054	\$ 5,027	\$ 25,134
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	109,761.60	38,400.00	25,368.00	\$ 109,762	\$ 38,400	\$ 25,368	\$ 173,530
1.16	Seeding	3,000	SF	1.50	1.50	1.00	\$ 4,500	\$ 4,500	\$ 3,000	\$ 12,000
1.17	Erosion Control-Silt fence install & remove	1,200	LF	2.41	3.16	0.72	\$ 2,892	\$ 3,792	\$ 864	\$ 7,548
1.18	Temporary fencing	800	LF	7.50	5.25	2.25	\$ 6,000	\$ 4,200	\$ 1,800	\$ 12,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kv	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
	Engineering									
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

NEXTera Energy- TO41 Core 6

10.Shore Road 138kV Substation Upgrades

Total: \$ 13,943,860

NEXTera Energy- TO41 Core 6										
		Material Supply	Labor Supply	Equip Supply	Total					
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL		\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738					
2. SUBSTATION FOUNDATIONS		\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747					
3. SUBSTATION STRUCTURES		\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217					
4. MAJOR EQUIPTMENT		\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293					
5. LOW VOLTAGE & CONTROL CABLE		\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093					
6. CONDUIT & CABLE TRENCH		\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840					
7. GROUND GRID		\$ 2,925	\$ 2,335	\$ 610	\$ 5,871					
8. CONTROL ENCLOSURE		\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625					
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936					
SUBTOTAL (Costs):		\$ 6,942,247	\$ 2,219,499	\$ 685,612	\$ 9,847,359					
CONTRACTOR MARK-UP (OH&P)		\$ 1,249,604	\$ 399,510	\$ 123,410	\$ 1,772,525					
SUBTOTAL:		\$ 8,191,851	\$ 2,619,009	\$ 809,023	\$ 11,619,883					
CONTINGENCY ON ENTIRE PROJECT		\$ 1,638,370	\$ 523,802	\$ 161,805	\$ 2,323,977					
TOTAL:		\$ 9,830,222	\$ 3,142,811	\$ 970,827	\$ 13,943,860					

Description of Work: Add a new 250 MVAr reactor at the existing Shore Road 138kV station (5 block of 50 MVAr)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 540	\$ 360	\$ 900
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	81	CY		24.50	10.50	\$ -	\$ 1,976	\$ 847	\$ 2,823
1.5	Site Grading- Excavation for Substation Pad	242	CY		9.00	6.00	\$ -	\$ 2,178	\$ 1,452	\$ 3,630
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	131	CY		21.00	9.00	\$ -	\$ 2,744.28	\$ 1,176.12	\$ 3,920.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	196	CY		2.40	1.60	\$ -	\$ 470	\$ 314	\$ 784
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	131	CY	25.00	2.40	1.60	\$ 3,267	\$ 314	\$ 209	\$ 3,790
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	242	SY	11.00	6.00	4.00	\$ 2,662	\$ 1,452	\$ 968	\$ 5,082
1.11	Site Surfacing - Aggregate 6" Thick	242	SY	16.50	4.50	3.00	\$ 3,993	\$ 1,089	\$ 726	\$ 5,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL. Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534
	Engineering									
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

NEXTera Energy- TO41 Core 6

11.Sprain Brook 345kV Substation Expansion

Total: \$ 588,691,401

NEXTera Energy- TO41 Core 6										
		Material Supply	Labor Supply	Equip Supply	Total					
11.Sprain Brook 345kV Substation Expansion										
1. SITE PREP/ GRADING/ FENCING / CIVIL		\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611					
2. SUBSTATION FOUNDATIONS		\$ 1,720,348	\$ 1,937,613	\$ 1,212,320	\$ 4,870,281					
3. SUBSTATION STRUCTURES		\$ 957,733	\$ 851,087	\$ 547,395	\$ 2,356,215					
4. MAJOR EQUIPTMENT		\$ 7,726,354	\$ 1,538,963	\$ 874,787	\$ 10,140,104					
5. LOW VOLTAGE & CONTROL CABLE		\$ 244,745	\$ 66,182	\$ 13,236	\$ 324,162					
6. CONDUIT & CABLE TRENCH		\$ 631,324	\$ 197,728	\$ 72,112	\$ 901,164					
7. GROUND GRID		\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401					
8. CONTROL ENCLOSURE		\$ 1,297,167	\$ 1,032,988	\$ 375,678	\$ 2,705,833					
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 6,931,946	\$ 72,783,131	\$ 17,990,666	\$ 97,705,743					
SUBTOTAL (Costs):		\$ 49,563,519	\$ 203,007,764	\$ 163,171,232	\$ 415,742,515					
CONTRACTOR MARK-UP (OH&P)		\$ 8,921,433	\$ 36,541,397	\$ 29,370,822	\$ 74,833,653					
SUBTOTAL:		\$ 58,484,953	\$ 239,549,161	\$ 192,542,053	\$ 490,576,167					
CONTINGENCY ON ENTIRE PROJECT		\$ 11,696,991	\$ 47,909,832	\$ 38,508,411	\$ 98,115,233					
TOTAL:		\$ 70,181,943	\$ 287,458,993	\$ 231,050,464	\$ 588,691,401					
Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11.Sprain Brook 345kV Substation Expansion										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.4	ACRE	-	42,000.00	28,000.00	\$ -	\$ 224,902	\$ 149,935	\$ 374,837
1.2	Demolition	1	LS	-	120,000.00	80,000.00	\$ -	\$ 120,000	\$ 80,000	\$ 200,000
1.3	New Access Road - 20'	3,631	SY	4.85	7.20	4.80	\$ 17,611	\$ 26,144	\$ 17,429	\$ 61,184
1.4	Strip and Dispose Top Soil	8,639	CY		24.50	10.50	\$ -	\$ 211,658	\$ 90,711	\$ 302,369
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	56,901	CY		9.00	6.00	\$ -	\$ 512,110	\$ 341,407	\$ 853,517
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	227,604	CY		120.00	180.00	\$ -	\$ 27,312,533	\$ 40,968,800	\$ 68,281,333
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	384,083	CY		21.00	9.00	\$ -	\$ 8,065,732.50	\$ 3,456,742.50	\$ 11,522,475
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	11,380	SY	11.00	6.00	4.00	\$ 125,182	\$ 68,281	\$ 45,521	\$ 238,985
1.12	Site Surfacing - Aggregate 6" Thick	11,380	SY	16.50	4.50	3.00	\$ 187,774	\$ 51,211	\$ 34,141	\$ 273,125
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,300	LF	13.85	13.85	6.92	\$ 18,002	\$ 18,002	\$ 9,001	\$ 45,006
1.14	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.15	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	219,523.20	76,800.00	50,736.00	\$ 219,523	\$ 76,800	\$ 50,736	\$ 347,059
1.17	Seeding	130,834	SF	1.50	1.50	1.00	\$ 196,251	\$ 196,251	\$ 130,834	\$ 523,336
1.18	Erosion Control-Silt fence install & remove	3,900	LF	2.41	3.16	0.72	\$ 9,399	\$ 12,324	\$ 2,808	\$ 24,531
1.19	Temporary fencing	1,430	LF	7.50	5.25	2.25	\$ 10,725	\$ 7,508	\$ 3,218	\$ 21,450
1.20	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Concrete Retaining Wall- Soil excavation	99,073	CY		9.00	6.00	\$ -	\$ 891,661	\$ 594,440	\$ 1,486,101

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727
1.26	Concrete Retaining Walll- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	350	CY	703.89	804.44	502.78	\$ 246,360	\$ 281,554	\$ 175,971	\$ 703,885
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	180	CY	703.89	804.44	502.78	\$ 126,699	\$ 144,799	\$ 90,500	\$ 361,998
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,720,348	\$ 1,937,613	\$ 1,212,320	\$ 4,870,281
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 957,733	\$ 851,087	\$ 547,395	\$ 2,356,215
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	16	EA	57,720.00	34,632.00	23,088.00	\$ 923,520	\$ 554,112	\$ 369,408	\$ 1,847,040
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,487.50	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		367,900.00	241,600.00	\$ -	\$ 367,900	\$ 241,600	\$ 609,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	641,250.00	384,750.00	256,500.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker	9	EA	350,000.00	57,239.00	24,531.00	\$ 3,150,000	\$ 515,151	\$ 220,779	\$ 3,885,930
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,194,419.50	716,651.70	477,767.80	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,726,354	\$ 1,538,963	\$ 874,787	\$ 10,140,104
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	46,200	LF	5.30	1.43	0.29	\$ 244,745	\$ 66,182	\$ 13,236	\$ 324,162
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 244,745	\$ 66,182	\$ 13,236	\$ 324,162
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,400	LF	11.15	10.80	5.40	\$ 93,660	\$ 90,720	\$ 45,360	\$ 229,740
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,018	LF	266.50	53.04	13.26	\$ 537,664	\$ 107,008	\$ 26,752	\$ 671,424
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00				\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00				\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28				\$ -
6.11	345kV UG- Conduit	466	LF	266.73	202.15	100.00				\$ -
6.12	345kV UG- Cable	1,398	LF	167.00	100.20	66.80				\$ -
6.13	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				\$ -
6.14	Fiber Optic Cable	466	LF	7.40	3.33	2.22				\$ -
6.15	Ground Continuity Conductor	466	LF	13.04	7.53	5.02				\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 631,324	\$ 197,728	\$ 72,112	\$ 901,164
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,277	LF	2.09	3.42	1.46	\$ 36,126	\$ 59,006	\$ 25,288	\$ 120,421
7.2	Caweld, DSA, 4/0 , T, CROSS	462	EA	165.00	75.00		\$ 76,230	\$ 34,650	\$ -	\$ 110,880
7.3	Ground Rod, 3/4" x 15'	410	EA	135.00	67.50	7.50	\$ 55,350	\$ 27,675	\$ 3,075	\$ 86,100
TOTAL - GROUND GRID							\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	542,947.99	380,063.60	162,884.40	\$ 542,948	\$ 380,064	\$ 162,884	\$ 1,085,896
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,297,167	\$ 1,032,988	\$ 375,678	\$ 2,705,833
11.Sprain Brook 345kV Substation Expansion							\$ 42,631,573	\$ 130,224,633	\$ 145,180,566	\$ 318,036,771
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,639,181.94	4,131,077.97	\$ -	\$ 9,639,182	\$ 4,131,078	\$ 13,770,260
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,180,367.71		\$ -	\$ 3,180,368	\$ -	\$ 3,180,368
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		12,721,470.86		\$ -	\$ 12,721,471	\$ -	\$ 12,721,471
9.4	Utility PM and Project Oversight	1.00	LS		3,180,367.71		\$ -	\$ 3,180,368	\$ -	\$ 3,180,368
9.5	Site Accommodation, Facilities, Storage	1.00	LS	3,180,367.71			\$ 3,180,368	\$ -	\$ -	\$ 3,180,368
	Engineering									
9.6	Design Engineering	1.00	LS		25,442,941.71		\$ -	\$ 25,442,942	\$ -	\$ 25,442,942
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,226,257.40		\$ -	\$ 2,226,257	\$ -	\$ 2,226,257
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		11,926,378.93		\$ -	\$ 11,926,379	\$ -	\$ 11,926,379
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,180,367.71		\$ -	\$ 3,180,368	\$ -	\$ 3,180,368
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		954,110.31		\$ -	\$ 954,110	\$ -	\$ 954,110
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,029,600.00	\$ -	\$ -	\$ 2,029,600	\$ 2,029,600
9.17	Legal Fees (Real estate)	1.00	LS		-	60,888.00	\$ -	\$ -	\$ 60,888	\$ 60,888
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 11,760,000	\$ -	\$ -	\$ 11,760,000	\$ 11,760,000
9.20	Sales Tax on Materials	8.80%	LS	42,631,573.11			\$ 3,751,578	\$ -	\$ -	\$ 3,751,578
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		318,036.77		\$ -	\$ 318,037	\$ -	\$ 318,037
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,931,946	\$ 72,783,131	\$ 17,990,666	\$ 97,705,743

NEXTera Energy- TO41 Core 6

12 - Station 36a Sprain Brook HVDC 1200MW Converter Station

Total: \$ 454,943,796

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,265,365	\$ 6,143,166	\$ 7,447,195	\$ 15,855,727
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ 238,706	\$ 172,356	\$ 40,224	\$ 451,286
8. CONTROL ENCLOSURE	\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,232,085	\$ 4,074,870	\$ 15,022,185	\$ 35,329,140
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 18,816,313	\$ 10,454,517	\$ 22,525,636	\$ 51,796,466
SUBTOTAL (Costs):	\$ 198,816,313	\$ 70,454,517	\$ 82,525,636	\$ 351,796,466
CONTRACTOR MARK-UP (OH&P)	\$ 14,186,936	\$ 5,481,813	\$ 7,654,615	\$ 27,323,364
SUBTOTAL:	\$ 213,003,249	\$ 75,936,330	\$ 90,180,251	\$ 379,119,830
CONTINGENCY ON ENTIRE PROJECT	\$ 42,600,650	\$ 15,187,266	\$ 18,036,050	\$ 75,823,966
TOTAL:	\$ 255,603,899	\$ 91,123,596	\$ 108,216,301	\$ 454,943,796

Description of Work: Construct a new Sprain Brook 1200MW converter station, with a transition from 320kV DC to 345kV AC and tie into the expanded Sprain Brook 345kV GIS station and the Northport-Sprain Brook HVDC cable.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 105,000	\$ 70,000	\$ 175,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,002	SY	4.85	7.20	4.80	\$ 4,861	\$ 7,216	\$ 4,811	\$ 16,887
1.4	Strip and Dispose Top Soil	8,067	CY		24.50	10.50	\$ -	\$ 197,633	\$ 84,700	\$ 282,333
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	4,033	CY		9.00	6.00	\$ -	\$ 36,300	\$ 24,200	\$ 60,500
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	36,300	CY		120.00	180.00	\$ -	\$ 4,356,000.00	\$ 6,534,000.00	\$ 10,890,000
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	43,560	CY		21.00	9.00	\$ -	\$ 914,760.00	\$ 392,040.00	\$ 1,306,800
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,089	CY		2.40	1.60	\$ -	\$ 2,614	\$ 1,742	\$ 4,356
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	43,560	CY	25.00	2.40	1.60	\$ 1,089,000	\$ 104,544	\$ 69,696	\$ 1,263,240
1.10	Install substation 8" pad base	12,100	SY	11.00	6.00	4.00	\$ 133,100	\$ 72,600	\$ 48,400	\$ 254,100
1.11	Site Surfacing - Aggregate 6" Thick	18,150	SY	16.50	4.50	3.00	\$ 299,475	\$ 81,675	\$ 54,450	\$ 435,600
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,872	LF	13.85	13.85	6.92	\$ 25,923	\$ 25,923	\$ 12,962	\$ 64,809
1.13	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.16	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.17	Erosion Control-Silt fence install & remove	3,089	LF	2.41	3.16	0.72	\$ 7,444	\$ 9,761	\$ 2,224	\$ 19,429
1.18	Temporary fencing	2,059	LF	7.50	5.25	2.25	\$ 15,444	\$ 10,811	\$ 4,633	\$ 30,888
1.19	Substation entrance with asphalt	812	SY	19.50	26.00	19.50	\$ 15,832	\$ 21,109	\$ 15,832	\$ 52,773

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,265,365	\$ 6,143,166	\$ 7,447,195	\$ 15,855,727
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Builiding		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA	852,222.22	511,333.33	340,888.89	\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Conduit	1,001	LF	266.73	202.15	100.00				
6.9	345kV UG- Cable	3,153	LF	167.00	100.20	66.80				
6.10	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				
6.13	Fiber Optic Cable	1,051	LF	7.40	3.33	2.22				
6.14	Ground Continuity Conductor	1,051	LF	13.04	7.53	5.02				
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	24,417	LF	2.09	3.42	1.46	\$ 51,056	\$ 83,391	\$ 35,739	\$ 170,186
7.2	Caweld, DSA, 4/0 , T, CROSS	648	EA	165.00	75.00		\$ 106,920	\$ 48,600	\$ -	\$ 155,520
7.3	Ground Rod, 3/4" x 15'	598	EA	135.00	67.50	7.50	\$ 80,730	\$ 40,365	\$ 4,485	\$ 125,580
TOTAL - GROUND GRID							\$ 238,706	\$ 172,356	\$ 40,224	\$ 451,286
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station							\$ 182,584,228	\$ 66,379,647	\$ 67,503,451	\$ 316,467,326
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		485,908.43	208,246.47	\$ -	\$ 485,908	\$ 208,246	\$ 694,155
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		658,693.03		\$ -	\$ 658,693	\$ -	\$ 658,693
9.4	Utility PM and Project Oversight	1	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.5	Site Accommodation, Facilities, Storage	1	LS	164,673.26			\$ 164,673	\$ -	\$ -	\$ 164,673
	Engineering									
9.6	Design Engineering	1.00	LS		1,317,386.06		\$ -	\$ 1,317,386	\$ -	\$ 1,317,386
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		115,271.28		\$ -	\$ 115,271	\$ -	\$ 115,271
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		617,524.71		\$ -	\$ 617,525	\$ -	\$ 617,525
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		49,401.98		\$ -	\$ 49,402	\$ -	\$ 49,402
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,558,096.00	\$ -	\$ -	\$ 5,558,096	\$ 5,558,096
9.17	Legal Fees (Real estate)	1.00	LS		-	166,742.88	\$ -	\$ -	\$ 166,743	\$ 166,743
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 9,080,000	\$ -	\$ -	\$ 9,080,000	\$ 9,080,000
9.20	Sales Tax on Materials	8.80%	LS	182,584,227.65			\$ 16,067,412	\$ -	\$ -	\$ 16,067,412
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		316,467.33		\$ -	\$ 316,467	\$ -	\$ 316,467
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,232,085	\$ 4,074,870	\$ 15,022,185	\$ 35,329,140

NEXTera Energy- TO41 Core 6

13- Station 30a New Northport HVDC 1200MW Converter Station

Total: \$ 448,740,863

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
13- Station 30a New Northport HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,491,747	\$ 1,285,611	\$ 729,878	\$ 3,507,235
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 6,063,620	\$ 3,718,325	\$ 2,122,341	\$ 11,904,286
7. GROUND GRID	\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE	\$ 293,437	\$ 234,750	\$ 58,687	\$ 586,875
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,714,737	\$ 3,872,639	\$ 10,404,395	\$ 30,991,771
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 24,788,558	\$ 9,273,986	\$ 13,353,320	\$ 47,415,864
SUBTOTAL (Costs):	\$ 204,788,558	\$ 69,273,986	\$ 73,353,320	\$ 347,415,864
CONTRACTOR MARK-UP (OH&P)	\$ 15,261,940	\$ 5,269,317	\$ 6,003,598	\$ 26,534,855
SUBTOTAL:	\$ 220,050,498	\$ 74,543,303	\$ 79,356,918	\$ 373,950,719
CONTINGENCY ON ENTIRE PROJECT	\$ 44,010,100	\$ 14,908,661	\$ 15,871,384	\$ 74,790,144
TOTAL:	\$ 264,060,598	\$ 89,451,964	\$ 95,228,301	\$ 448,740,863

Description of Work: Construct a new Northport 1200MW converter station, with a transition from 320kV DC to 138kV AC and tie into the new Northport 138kV GIS with three 138kV lines.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13- Station 30a New Northport HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 105,000	\$ 70,000	\$ 175,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,200	SY	4.85	7.20	4.80	\$ 10,670	\$ 15,840	\$ 10,560	\$ 37,070
1.4	Strip and Dispose Top Soil	8,067	CY		24.50	10.50	\$ -	\$ 197,633	\$ 84,700	\$ 282,333
1.5	Site Grading- Excavation for Substation Pad	24,200	CY		9.00	6.00	\$ -	\$ 217,800	\$ 145,200	\$ 363,000
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	13,068	CY		21.00	9.00	\$ -	\$ 274,428.00	\$ 117,612.00	\$ 392,040.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	19,602	CY		2.40	1.60	\$ -	\$ 47,045	\$ 31,363	\$ 78,408
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	13,068	CY	25.00	2.40	1.60	\$ 326,700	\$ 31,363	\$ 20,909	\$ 378,972
1.9	Install substation 8" pad base	12,100	SY	11.00	6.00	4.00	\$ 133,100	\$ 72,600	\$ 48,400	\$ 254,100
1.10	Site Surfacing - Aggregate 6" Thick	18,150	SY	16.50	4.50	3.00	\$ 299,475	\$ 81,675	\$ 54,450	\$ 435,600
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,922	LF	13.85	13.85	6.92	\$ 26,616	\$ 26,616	\$ 13,308	\$ 66,540
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.15	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.16	Erosion Control-Silt fence install & remove	3,171	LF	2.41	3.16	0.72	\$ 7,643	\$ 10,021	\$ 2,283	\$ 19,947
1.17	Temporary fencing	2,114	LF	7.50	5.25	2.25	\$ 15,857	\$ 11,100	\$ 4,757	\$ 31,713
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,491,747	\$ 1,285,611	\$ 729,878	\$ 3,507,235
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138kV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Builiding		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	7,020	LF	266.73	202.15	100.00	\$ 1,872,451	\$ 1,419,068	\$ 702,034	\$ 3,993,554
6.9	138kV UG- Cable	22,113	LF	145.00	87.00	58.00	\$ 3,206,385	\$ 1,923,831	\$ 1,282,554	\$ 6,412,770
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	7,371	LF	7.40	3.33	2.22	\$ 54,523	\$ 24,550	\$ 16,367	\$ 95,440
6.14	Ground Continuity Conductor	7,371	LF	13.04	7.53	5.02	\$ 96,110	\$ 55,482	\$ 36,988	\$ 188,580
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,063,620	\$ 3,718,325	\$ 2,122,341	\$ 11,904,286
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	23,100	LF	2.09	3.42	1.46	\$ 48,302	\$ 78,893	\$ 33,811	\$ 161,007
7.2	Caweld, DSA, 4/0 , T, CROSS	612	EA	165.00	75.00		\$ 100,980	\$ 45,900	\$ -	\$ 146,880
7.3	Ground Rod, 3/4" x 15'	561	EA	135.00	67.50	7.50	\$ 75,735	\$ 37,868	\$ 4,208	\$ 117,810
TOTAL - GROUND GRID							\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.8	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 293,437	\$ 234,750	\$ 58,687	\$ 586,875
13- Station 30a New Northport HVDC 1200MW Converter Station							\$ 188,073,821	\$ 65,401,347	\$ 62,948,925	\$ 316,424,093
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		292,259.53	125,254.08	\$ -	\$ 292,260	\$ 125,254	\$ 417,514
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		656,963.72		\$ -	\$ 656,964	\$ -	\$ 656,964
9.4	Utility PM and Project Oversight	1	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.5	Site Accommodation, Facilities, Storage	1	LS	164,240.93			\$ 164,241	\$ -	\$ -	\$ 164,241
	Engineering									
9.6	Design Engineering	1.00	LS		1,313,927.44		\$ -	\$ 1,313,927	\$ -	\$ 1,313,927
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		114,968.65		\$ -	\$ 114,969	\$ -	\$ 114,969
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		615,903.49		\$ -	\$ 615,903	\$ -	\$ 615,903
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		49,272.28		\$ -	\$ 49,272	\$ -	\$ 49,272
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,271,884.00	\$ -	\$ -	\$ 1,271,884	\$ 1,271,884
9.17	Legal Fees (Real estate)	1.00	LS		-	38,156.52	\$ -	\$ -	\$ 38,157	\$ 38,157
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 8,960,000	\$ -	\$ -	\$ 8,960,000	\$ 8,960,000
9.20	Sales Tax on Materials	8.80%	LS	188,073,820.71			\$ 16,550,496	\$ -	\$ -	\$ 16,550,496
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		316,424.09		\$ -	\$ 316,424	\$ -	\$ 316,424
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,714,737	\$ 3,872,639	\$ 10,404,395	\$ 30,991,771

NEXtera Energy- TO41 Core 6

14 - Northport 138kV GIS Substation

Total: \$ 40,126,906

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
14 - Northport 138kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 423,784	\$ 299,491	\$ 171,133	\$ 894,409
2. SUBSTATION FOUNDATIONS	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 2,658,505	\$ 1,489,519	\$ 795,356	\$ 4,943,380
7. GROUND GRID	\$ 31,301	\$ 22,409	\$ 5,136	\$ 58,846
8. CONTROL ENCLOSURE	\$ 1,925,705	\$ 1,502,309	\$ 534,896	\$ 3,962,909
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,212,779	\$ 2,378,384	\$ 1,029,353	\$ 4,620,516
Turnkey cost (HVDC, GIS)	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
Non-Turnkey cost	\$ 6,596,977	\$ 6,086,288	\$ 2,782,234	\$ 15,465,499
SUBTOTAL (Costs):	\$ 13,761,977	\$ 10,385,288	\$ 5,648,234	\$ 29,795,499
CONTRACTOR MARK-UP (OH&P)	\$ 1,617,356	\$ 1,353,472	\$ 672,762	\$ 3,643,590
SUBTOTAL:	\$ 15,379,333	\$ 11,738,760	\$ 6,320,996	\$ 33,439,088
CONTINGENCY ON ENTIRE PROJECT	\$ 3,075,867	\$ 2,347,752	\$ 1,264,199	\$ 6,687,818
TOTAL:	\$ 18,455,200	\$ 14,086,511	\$ 7,585,195	\$ 40,126,906

Description of Work: Construct a new Northport 138kV GIS substation adjacent to the existing Northport 138kV substation. Tie the existing Pilgrim-Northport 138kV lines, the new 138kV lines to Northport HVDC station, and the existing Northport 138kV substation into the 138kV breaker-and-a-half bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 - Northport 138kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 20,549	\$ 13,699	\$ 34,249
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,105	SY	4.85	7.20	4.80	\$ 5,361	\$ 7,958	\$ 5,306	\$ 18,625
1.4	Strip and Dispose Top Soil	1,579	CY		24.50	10.50	\$ -	\$ 38,678	\$ 16,576	\$ 55,255
1.5	Site Grading- Excavation for Substation Pad	4,736	CY		9.00	6.00	\$ -	\$ 42,625	\$ 28,417	\$ 71,042
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	2,558	CY		21.00	9.00	\$ -	\$ 53,707.50	\$ 23,017.50	\$ 76,725.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,836	CY		2.40	1.60	\$ -	\$ 9,207	\$ 6,138	\$ 15,345
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,558	CY	25.00	2.40	1.60	\$ 63,938	\$ 6,138	\$ 4,092	\$ 74,168
1.9	Install substation 8" pad base	2,368	SY	11.00	6.00	4.00	\$ 26,049	\$ 14,208	\$ 9,472	\$ 49,729
1.10	Site Surfacing - Aggregate 6" Thick	3,552	SY	16.50	4.50	3.00	\$ 58,609	\$ 15,984	\$ 10,656	\$ 85,250
1.11	7' Station Fence w/ Barbed Wire & Grounding	642	LF	13.85	13.85	6.92	\$ 8,890	\$ 8,890	\$ 4,445	\$ 22,226
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	223,488.00	57,600.00	38,052.00	\$ 223,488	\$ 57,600	\$ 38,052	\$ 319,140
1.15	Seeding	5,600	SF	1.50	1.50	1.00	\$ 8,400	\$ 8,400	\$ 5,600	\$ 22,400
1.16	Erosion Control-Silt fence install & remove	1,059	LF	2.41	3.16	0.72	\$ 2,553	\$ 3,347	\$ 763	\$ 6,663
1.17	Temporary fencing	706	LF	7.50	5.25	2.25	\$ 5,297	\$ 3,708	\$ 1,589	\$ 10,593
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 423,784	\$ 299,491	\$ 171,133	\$ 894,409
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, GIS Enclosure-BLDG	490	CY	703.89	804.44	502.78	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
2.25	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138Kv, GIS indoor	15	EA	477,666.67	286,600.00	191,066.67	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
4.19	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	2,449	LF	266.73	202.15	100.00	\$ 653,224	\$ 495,057	\$ 244,912	\$ 1,393,193
6.9	138kV UG- Cable	7,714	LF	145.00	87.00	58.00	\$ 1,118,581	\$ 671,148	\$ 447,432	\$ 2,237,162
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	2,571	LF	7.40	3.33	2.22	\$ 19,021	\$ 8,564	\$ 5,710	\$ 33,295
6.14	Ground Continuity Conductor	2,571	LF	13.04	7.53	5.02	\$ 33,529	\$ 19,355	\$ 12,904	\$ 65,788
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,658,505	\$ 1,489,519	\$ 795,356	\$ 4,943,380
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,140	LF	2.09	3.42	1.46	\$ 6,566	\$ 10,724	\$ 4,596	\$ 21,886
7.2	Caweld, DSA, 4/0 , T, CROSS	91	EA	165.00	75.00		\$ 15,015	\$ 6,825	\$ -	\$ 21,840
7.3	Ground Rod, 3/4" x 15'	72	EA	135.00	67.50	7.50	\$ 9,720	\$ 4,860	\$ 540	\$ 15,120
TOTAL - GROUND GRID							\$ 31,301	\$ 22,409	\$ 5,136	\$ 58,846
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	1	EA	878,048.71	614,634.10	263,414.61	\$ 878,049	\$ 614,634	\$ 263,415	\$ 1,756,097
8.3	Primary Line Relays (87L): SEL-411L	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.4	Backup Line Relays (87L): GE L90	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,925,705	\$ 1,502,309	\$ 534,896	\$ 3,962,909

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 - Northport 138kV GIS Substation							\$ 12,549,198	\$ 8,006,904	\$ 4,618,880	\$ 25,174,983
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		191,127.46	81,911.77	\$ -	\$ 191,127	\$ 81,912	\$ 273,039
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		433,799.31		\$ -	\$ 433,799	\$ -	\$ 433,799
9.4	Utility PM and Project Oversight	1	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.5	Site Accommodation, Facilities, Storage	1	LS	108,449.83			\$ 108,450	\$ -	\$ -	\$ 108,450
	Engineering									
9.6	Design Engineering	1.00	LS		867,598.62		\$ -	\$ 867,599	\$ -	\$ 867,599
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		75,914.88		\$ -	\$ 75,915	\$ -	\$ 75,915
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		406,686.85		\$ -	\$ 406,687	\$ -	\$ 406,687
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		32,534.95		\$ -	\$ 32,535	\$ -	\$ 32,535
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	134,312.00	\$ -	\$ -	\$ 134,312	\$ 134,312
9.17	Legal Fees (Real estate)	1.00	LS		-	4,029.36	\$ -	\$ -	\$ 4,029	\$ 4,029
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 800,000	\$ -	\$ -	\$ 800,000	\$ 800,000
9.20	Sales Tax on Materials	8.80%	LS	12,549,198.06			\$ 1,104,329	\$ -	\$ -	\$ 1,104,329
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,174.98		\$ -	\$ 25,175	\$ -	\$ 25,175
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,212,779	\$ 2,378,384	\$ 1,029,353	\$ 4,620,516

NEXTera Energy- TO41 Core 6

15.Pilgrim 138kV Substation Upgrades

Total: \$ 2,036,018

NEXTera Energy- TO41 Core 6										
		Material Supply	Labor Supply	Equip Supply	Total					
15.Pilgrim 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL		\$ -	\$ 24,000	\$ 16,000	\$ 40,000					
2. SUBSTATION FOUNDATIONS		\$ 34,758	\$ 39,723	\$ 24,827	\$ 99,308					
3. SUBSTATION STRUCTURES		\$ 45,630	\$ 59,338	\$ 37,176	\$ 142,144					
4. MAJOR EQUIPTMENT		\$ 234,399	\$ 58,019	\$ 25,896	\$ 318,314					
5. LOW VOLTAGE & CONTROL CABLE		\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784					
6. CONDUIT & CABLE TRENCH		\$ 76,660	\$ 22,980	\$ 8,175	\$ 107,815					
7. GROUND GRID		\$ 2,925	\$ 2,335	\$ 610	\$ 5,871					
8. CONTROL ENCLOSURE		\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250					
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 63,002	\$ 233,261	\$ 51,117	\$ 347,380					
SUBTOTAL (Costs):		\$ 655,016	\$ 583,463	\$ 199,387	\$ 1,437,866					
CONTRACTOR MARK-UP (OH&P)		\$ 117,903	\$ 105,023	\$ 35,890	\$ 258,816					
SUBTOTAL:		\$ 772,919	\$ 688,486	\$ 235,277	\$ 1,696,682					
CONTINGENCY ON ENTIRE PROJECT		\$ 154,584	\$ 137,697	\$ 47,055	\$ 339,336					
TOTAL:		\$ 927,503	\$ 826,183	\$ 282,333	\$ 2,036,018					
Description of Work: Add 1 terminal to Pilgrim 138kV substation to accommodate the new transmission line										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS		24,000.00	16,000.00	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting	0	EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 24,000	\$ 16,000	\$ 40,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	6	CY	703.89	804.44	502.78	\$ 4,266	\$ 4,875	\$ 3,047	\$ 12,187
2.28	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 34,758	\$ 39,723	\$ 24,827	\$ 99,308
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.18	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	150	LF	25.00	184.94	123.29	\$ 3,750	\$ 27,741	\$ 18,494	\$ 49,985
3.22	AL. Bus fittings	1	LS	4,500.00	4,500.00	2,250.00	\$ 4,500	\$ 4,500	\$ 2,250	\$ 11,250
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,630	\$ 59,338	\$ 37,176	\$ 142,144
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA				\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 234,399	\$ 58,019	\$ 25,896	\$ 318,314
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	5,100	LF	5.30	1.43	0.29	\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	900	LF	11.15	10.80	5.40	\$ 10,035	\$ 9,720	\$ 4,860	\$ 24,615
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 76,660	\$ 22,980	\$ 8,175	\$ 107,815
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL- CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
10.Shore Road 138kV Substation Upgrades							\$ 592,014	\$ 350,201	\$ 148,270	\$ 1,090,486
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,446.51	7,477.08	\$ -	\$ 17,447	\$ 7,477	\$ 24,924
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,619.43		\$ -	\$ 43,619	\$ -	\$ 43,619
9.4	Utility PM and Project Oversight	1	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.5	Site Accommodation, Facilities, Storage	1	LS	10,904.86			\$ 10,905	\$ -	\$ -	\$ 10,905
	Engineering									
9.6	Design Engineering	1.00	LS		87,238.86		\$ -	\$ 87,239	\$ -	\$ 87,239
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		7,633.40		\$ -	\$ 1,527	\$ -	\$ 1,527
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,893.21		\$ -	\$ 40,893	\$ -	\$ 40,893
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,271.46		\$ -	\$ 3,271	\$ -	\$ 3,271
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	592,014.04			\$ 52,097	\$ -	\$ -	\$ 52,097
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,090.49		\$ -	\$ 1,090	\$ -	\$ 1,090
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,002	\$ 233,261	\$ 51,117	\$ 347,380

NEXTera Energy- TO41 Core 6

16. Existing Ruland Road 138 kV Substation Upgrades

Total: \$ 2,030,035

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
16. Existing Ruland Road 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938.22
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364.35
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410.00
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312.46
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,245.74
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at exisitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16. Existing Ruland Road 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus fittings		LS	22,500.00	22,500.00	11,250.00	\$ -	\$ -	\$ -	\$ -
3.21	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.2	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.4	345/138KV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.13	Fiber Optic Cable	0	LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.14	Ground Continuity Conductor	0	LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	0	EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.20	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.21	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
16. Existing Ruland Road 138 kV Substation Upgrades							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech		EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXtera Energy- TO41 Core 6

17. Existing East Garden City 138 kV Substation Upgrades

Total: \$ 28,298,464

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
17. Existing East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPTMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
17. Existing East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.20	AL. Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.21	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0.00	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		272,900.20	178,266.80	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator with oil containment	0	EA	25,764,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- PARs	0	EA		1,215,400.00	806,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
6.16										
6.17							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.22	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.23	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.24	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.25	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
17. Existing East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversight	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
	Engineering									
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
	Permitting and Additional Costs									
9.11	Physical Security		LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

<p align="center"> <u>NEXtera Energy- TO41 Core 6</u> <u>Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit</u> <u>(EGC To Dunwoodie 345 kV)</u> </p>	
Total:	\$ 188,625,656

	Total: \$ 188,625,656
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NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 7	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR /GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

<p align="center"> <u>NEXTera Energy- TO41 Core 6</u> <u>Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Single circuit</u> <u>(Ruland To Sprain Brook 345 kV)</u> </p> <p align="center"> Total: \$ 190,348,435 </p>	
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	Total: \$ 190,348,435
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NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,428,213	\$ 13,991,584	\$ 9,068,290	\$ 37,488,087
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 26,563,688	\$ 16,084,460	\$ 10,362,874	\$ 53,011,023
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,896,317	\$ 16,766,065	\$ 5,757,273	\$ 27,419,655
SUBTOTAL (Costs):	\$ 47,984,667	\$ 57,128,499	\$ 29,313,695	\$ 134,426,861
CONTRACTOR MARK-UP (OH&P)	\$ 8,637,240	\$ 10,283,130	\$ 5,276,465	\$ 24,196,835
SUBTOTAL:	\$ 56,621,907	\$ 67,411,628	\$ 34,590,161	\$ 158,623,696
CONTINGENCY ON ENTIRE PROJECT	\$ 11,324,381	\$ 13,482,326	\$ 6,918,032	\$ 31,724,739
TOTAL:	\$ 67,946,288	\$ 80,893,954	\$ 41,508,193	\$ 190,348,435

Description of Work: Dunwoodie - New Rochelle Landing (single circuit duct). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	350,573	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 701,146	\$ 525,859	\$ 175,286	\$ 1,402,291
2.3	Trench Excavation	17,529	CY		\$ 17.5	\$ 7.5	\$ -	\$ 306,751	\$ 131,465	\$ 438,216
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,826	SF	\$ 50	\$ 25	\$ 14	\$ 91,295	\$ 44,735	\$ 25,563	\$ 161,592
2.5	Supply & Install Thermal Backfill	15,338	CY	\$ 350	\$ 245	\$ 105	\$ 5,368,146	\$ 3,757,702	\$ 1,610,444	\$ 10,736,292
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,140	CY	\$ 200	\$ 125	\$ 50	\$ 1,428,097	\$ 892,561	\$ 357,024	\$ 2,677,682
2.9	Conduit 8" SCH 40PVC	178,886	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 5,116,151	\$ 1,014,286	\$ 434,694	\$ 6,565,131
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	89,443	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 314,840	\$ 281,746	\$ 120,748	\$ 717,334
2.12	Warning Tape	89,443	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,416	\$ 22,361	\$ 8,944	\$ 44,722
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	268,330	LF			\$ 0.25	\$ -	\$ -	\$ 67,082	\$ 67,082

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 238,996	\$ 238,996	\$ 119,498	\$ 597,490
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,742	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 106,126	\$ 111,432	\$ 47,756	\$ 265,314
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,562	\$ 85,686	\$ 114,248
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	71	EA		\$ 10	\$ 15	\$ -	\$ 714	\$ 1,071	\$ 1,785
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	153	EA		\$ 400	\$ 1,200	\$ -	\$ 61,350	\$ 184,051	\$ 245,401
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	25,510	CY		\$ 24.5	\$ 10.5	\$ -	\$ 624,994	\$ 267,854	\$ 892,848
2.27	Rock Excavation and Removal	13,680	CY		\$ 243	\$ 162	\$ -	\$ 3,324,344	\$ 2,216,229	\$ 5,540,573
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	20,521	CF		\$ 1.0	\$ 0.5	\$ -	\$ 20,521	\$ 10,260	\$ 30,781
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,428,213	\$ 13,991,584	\$ 9,068,290	\$ 37,488,087
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	46,958	FT	\$ 7	\$ 3	\$ 2	\$ 347,346	\$ 156,397	\$ 104,265	\$ 608,008
3.12	Ground Continuity Conductor	46,958	FT	\$ 13	\$ 8	\$ 5	\$ 612,281	\$ 353,450	\$ 235,634	\$ 1,201,365
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 26,563,688	\$ 16,084,460	\$ 10,362,874	\$ 53,011,023
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 43,088,349	\$ 40,362,433	\$ 23,556,423	\$ 107,007,205
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,917,566	\$ 1,278,377	\$ -	\$ 1,917,566	\$ 1,278,377	\$ 3,195,943
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,070,072.05		\$ -	\$ 1,070,072	\$ -	\$ 1,070,072
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,280,288.21		\$ -	\$ 4,280,288	\$ -	\$ 4,280,288
4.4	Utility PM and Project Oversight	1	LS		1,070,072.05		\$ -	\$ 1,070,072	\$ -	\$ 1,070,072
4.5	Site Accommodation, Facilities, Storage	1	LS	1,070,072.05			\$ 1,070,072	\$ -	\$ -	\$ 1,070,072
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,350,360	\$ -	\$ -	\$ 5,350,360	\$ -	\$ 5,350,360
4.7	LiDAR /GPR	1.0	LS		\$ 192,613	\$ 128,409	\$ -	\$ 192,613	\$ 128,409	\$ 321,022
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 449,430	\$ 299,620	\$ -	\$ 449,430	\$ 299,620	\$ 749,050
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,070,072		\$ -	\$ 1,070,072	\$ -	\$ 1,070,072
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 321,022		\$ -	\$ 321,022	\$ -	\$ 321,022
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 123,767	\$ -	\$ -	\$ 123,767	\$ 123,767
4.16	Legal Fees (Real estate)	1.00	LS		-	3,713.00	\$ -	\$ -	\$ 3,713	\$ 3,713
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,800,000	\$ -	\$ -	\$ 3,800,000	\$ 3,800,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 43,088,349.18			\$ 3,826,245	\$ -	\$ -	\$ 3,826,245
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 107,007	\$ -	\$ -	\$ 107,007	\$ 107,007
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,896,317	\$ 16,766,065	\$ 5,757,273	\$ 27,419,655

NEXtera Energy- TO41 Core 6

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit

(Northport To Sprain Brook 320 kV DC)

Total: \$ 159,124,018

NEXtera Energy- TO41 Core 6					
		Material Supply	Labor Supply	Equip Supply	Total
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)					
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT		\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		\$ 13,444,148	\$ 13,874,209	\$ 9,004,614	\$ 36,322,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION		\$ 18,612,600	\$ 10,891,459	\$ 7,013,404	\$ 36,517,464
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 3,926,289	\$ 14,226,390	\$ 4,874,509	\$ 23,027,188
SUBTOTAL (Costs):		\$ 38,079,485	\$ 49,278,448	\$ 25,017,786	\$ 112,375,719
CONTRACTOR MARK-UP (OH&P)		\$ 6,854,307	\$ 8,870,121	\$ 4,503,202	\$ 20,227,629
SUBTOTAL:		\$ 44,933,792	\$ 58,148,568	\$ 29,520,988	\$ 132,603,348
CONTINGENCY ON ENTIRE PROJECT		\$ 8,986,758	\$ 11,629,714	\$ 5,904,198	\$ 26,520,670
TOTAL:		\$ 53,920,551	\$ 69,778,282	\$ 35,425,185	\$ 159,124,018

Description of Work: Dunwoodie - New Rochelle Landing (single circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	352,013	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 704,026	\$ 528,019	\$ 176,006	\$ 1,408,051
2.3	Trench Excavation	17,601	CY		\$ 17.5	\$ 7.5	\$ -	\$ 308,011	\$ 132,005	\$ 440,016
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,833	SF	\$ 50	\$ 25	\$ 14	\$ 91,670	\$ 44,918	\$ 25,668	\$ 162,256
2.5	Supply & Install Thermal Backfill	15,401	CY	\$ 350	\$ 245	\$ 105	\$ 5,390,196	\$ 3,773,137	\$ 1,617,059	\$ 10,780,392
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,717	CY	\$ 200	\$ 125	\$ 50	\$ 1,543,478	\$ 964,674	\$ 385,870	\$ 2,894,022
2.9	Conduit 8" SCH 40PVC	134,165	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 3,837,113	\$ 760,714	\$ 326,020	\$ 4,923,848
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	134,165	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 472,260	\$ 422,619	\$ 181,122	\$ 1,076,002
2.12	Warning Tape	89,443	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,416	\$ 22,361	\$ 8,944	\$ 44,722
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,464	CY		\$ 17.5	\$ 7.5	\$ -	\$ 43,120	\$ 18,480	\$ 61,600
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	739	CY		\$ 14.0	\$ 6.0	\$ -	\$ 10,349	\$ 4,435	\$ 14,784
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	268,330	LF			\$ 0.25	\$ -	\$ -	\$ 67,082	\$ 67,082

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,916	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 236,826	\$ 236,826	\$ 118,413	\$ 592,065
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,699	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 105,162	\$ 110,420	\$ 47,323	\$ 262,905
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	77	EA		\$ 400	\$ 1,200	\$ -	\$ 30,870	\$ 92,609	\$ 123,478
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	77	EA		\$ 10	\$ 15	\$ -	\$ 772	\$ 1,158	\$ 1,929
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,602	\$ 184,807	\$ 246,409
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	25,123	CY		\$ 24.5	\$ 10.5	\$ -	\$ 615,515	\$ 263,792	\$ 879,308
2.27	Rock Excavation and Removal	13,376	CY		\$ 243	\$ 162	\$ -	\$ 3,250,472	\$ 2,166,981	\$ 5,417,453
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	20,065	CF		\$ 1.0	\$ 0.5	\$ -	\$ 20,065	\$ 10,032	\$ 30,097
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,444,148	\$ 13,874,209	\$ 9,004,614	\$ 36,322,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE	93,915	FT	\$ 166	\$ 100	\$ 66	\$ 15,589,950	\$ 9,353,970	\$ 6,235,980	\$ 31,179,900
3.2	Circuit #1- Cable Splicing- 320 DckV 5000 kcmil copper XLPE	60	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 1,160,940	\$ 590,789	\$ 168,797	\$ 1,920,526
3.3	Circuit #1- Cable Termination- 320 DckV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.4	Circuit #2- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 320 DckV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 320 DckV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320 DckV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320 DckV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 629,624	\$ 377,774	\$ 251,849	\$ 1,259,247
3.11	Fiber Optic Cable	46,958	FT	\$ 7	\$ 3	\$ 2	\$ 347,346	\$ 156,397	\$ 104,265	\$ 608,008
3.12	Ground Continuity Conductor	46,958	FT	\$ 13	\$ 8	\$ 5	\$ 612,281	\$ 353,450	\$ 235,634	\$ 1,201,365
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 18,612,600	\$ 10,891,459	\$ 7,013,404	\$ 36,517,464
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 34,153,196	\$ 35,052,057	\$ 20,143,277	\$ 89,348,530
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,655,860	\$ 1,103,907	\$ -	\$ 1,655,860	\$ 1,103,907	\$ 2,759,767
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		893,485.30		\$ -	\$ 893,485	\$ -	\$ 893,485
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		3,573,941.22		\$ -	\$ 3,573,941	\$ -	\$ 3,573,941
4.4	Utility PM and Project Oversight	1	LS		893,485.30		\$ -	\$ 893,485	\$ -	\$ 893,485
4.5	Site Accommodation, Facilities, Storage	1	LS	893,485.30			\$ 893,485	\$ -	\$ -	\$ 893,485
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,467,427	\$ -	\$ -	\$ 4,467,427	\$ -	\$ 4,467,427
4.7	LiDAR /GPR	1.0	LS		\$ 160,827	\$ 107,218	\$ -	\$ 160,827	\$ 107,218	\$ 268,046
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 375,264	\$ 250,176	\$ -	\$ 375,264	\$ 250,176	\$ 625,440
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 893,485		\$ -	\$ 893,485	\$ -	\$ 893,485
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 268,046		\$ -	\$ 268,046	\$ -	\$ 268,046
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 123,767	\$ -	\$ -	\$ 123,767	\$ 123,767
4.16	Legal Fees (Real estate)	1.00	LS		-	3,713.00	\$ -	\$ -	\$ 3,713	\$ 3,713
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,180,000	\$ -	\$ -	\$ 3,180,000	\$ 3,180,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 34,153,196.04			\$ 3,032,804	\$ -	\$ -	\$ 3,032,804
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 89,349	\$ -	\$ -	\$ 89,349	\$ 89,349
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,926,289	\$ 14,226,390	\$ 4,874,509	\$ 23,027,188

NEXtera Energy- TO41 Core 6

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Two circuits (two lines, single circuit each)

EGC-Dunwoodie 345KV / Ruland-SprainBrook 345KV

Total: \$ 524,998,762

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 116,979,561	\$ 104,729,644	\$ 71,163,184	\$ 292,872,389
2. TRANSITION STATION	\$ 920,987	\$ 1,160,115	\$ 1,105,523	\$ 3,186,625
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 13,335,838	\$ 46,001,031	\$ 15,365,954	\$ 74,702,824
SUBTOTAL (Costs):	\$ 131,236,386	\$ 151,890,790	\$ 87,634,662	\$ 370,761,837
CONTRACTOR MARK-UP (OH&P)	\$ 23,622,549	\$ 27,340,342	\$ 15,774,239	\$ 66,737,131
SUBTOTAL:	\$ 154,858,935	\$ 179,231,132	\$ 103,408,901	\$ 437,498,968
CONTINGENCY ON ENTIRE PROJECT	\$ 30,971,787	\$ 35,846,226	\$ 20,681,780	\$ 87,499,794
TOTAL:	\$ 185,830,722	\$ 215,077,358	\$ 124,090,681	\$ 524,998,762

Description of Work: New Rochelle landing - Hempstead Harbor Landing. Part of any Dunwoodie to Shore/Ruland/EGC 345 kV project segment (Include HDD's to get onshore at both ends of route) 1600 mm2 Tri-Core										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	200,260	FT	\$ 537	\$ 400	\$ 250	\$ 107,539,534	\$ 80,103,936	\$ 50,064,960	\$ 237,708,430
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 10,135,879	\$ 6,757,252	\$ -	\$ 10,135,879	\$ 6,757,252	\$ 16,893,131
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.5	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	100,130	FT	\$ 7			\$ 740,661	\$ -	\$ -	\$ 740,661
1.8	Ground Continuity Conductor	100,130	FT	\$ 13			\$ 1,305,594	\$ -	\$ -	\$ 1,305,594
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	4,342	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,947,200	\$ 13,894,400	\$ 13,894,400	\$ 34,736,000
TOTAL - Submarine cable:							\$ 116,979,561	\$ 104,729,644	\$ 71,163,184	\$ 292,872,389
2. TRANSITION STATION										
2.1	Site Clearing	1.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 10,800	\$ 7,200	\$ 18,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	1,613	CY		24.50	10.50	\$ -	\$ 39,527	\$ 16,940	\$ 56,467
2.4	Site Grading- Excavation for Substation Pad	4,840	CY		9.00	6.00	\$ -	\$ 43,560	\$ 29,040	\$ 72,600
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,614	CY		21.00	9.00	\$ -	\$ 54,885.60	\$ 23,522.40	\$ 78,408.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,920	CY		2.40	1.60	\$ -	\$ 9,409	\$ 6,273	\$ 15,682
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	2,614	CY	25.00	2.40	1.60	\$ 65,340	\$ 6,273	\$ 4,182	\$ 75,794
2.8	Install substation 8" pad base	4,840	SY	11.00	6.00	4.00	\$ 53,240	\$ 29,040	\$ 19,360	\$ 101,640
2.9	Site Surfacing - Aggregate 6" Thick	4,840	SY	16.50	4.50	3.00	\$ 79,860	\$ 21,780	\$ 14,520	\$ 116,160
2.10	7' Station Fence w/ Barbed Wire & Grounding	900	LF	13.85	13.85	6.92	\$ 12,463	\$ 12,463	\$ 6,232	\$ 31,158
2.11	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
2.12	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
2.13	Erosion Control-Silt fence install & remove	1,500	LF	2.41	3.16	0.72	\$ 3,615	\$ 4,740	\$ 1,080	\$ 9,435
2.14	Temporary fencing	1,000	LF	7.50	5.25	2.25	\$ 7,500	\$ 5,250	\$ 2,250	\$ 15,000
2.15	345kV, Cable sealing end - 3 Ph	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.16	345kV, lighting arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.17	345kV, Cable sealing end - 3 Ph	12	EA	8,346.00	5,758.74	3,839.16	\$ 100,152	\$ 69,105	\$ 46,070	\$ 215,327

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
2.18	345kV, lighting arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
2.19	AL. Bus Tubing, 5" SCH 80	420	LF	25.00	184.94	123.29	\$ 10,500	\$ 77,674	\$ 51,783	\$ 139,957
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	267	LF	2.09	-	-	\$ 558	\$ -	\$ -	\$ 558
2.22	Caweld, DSA, 4/0 , T, CROSS	133	EA	165.00	75.00		\$ 22,000	\$ 10,000	\$ -	\$ 32,000
2.23	Ground Rod, 3/4" x 15'	36	EA	135.00	67.50	7.50	\$ 4,860	\$ 2,430	\$ 270	\$ 7,560
2.24	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.25	Splice Vault Excavation	5,177	CY		\$ 17.5	\$ 7.5	\$ -	\$ 90,596	\$ 38,827	\$ 129,422
2.26	Splice Vault Supply & Installation	8	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 364,000	\$ 171,600	\$ 400,400	\$ 936,000
2.27	Splice Vault Backfill	1,553	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,743	\$ 9,318	\$ 31,061
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	4,711	CY		\$ 24.5	\$ 10.5	\$ -	\$ 115,419	\$ 49,465	\$ 164,884
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	5,177	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,177	\$ 2,588	\$ 7,765
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 920,987	\$ 1,160,115	\$ 1,105,523	\$ 3,186,625
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 117,900,548	\$ 105,889,759	\$ 72,268,707	\$ 296,059,014
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		11,842,360.55		\$ -	\$ 11,842,361	\$ -	\$ 11,842,361
3.4	Utility PM and Project Oversight	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.5	Site Accommodation, Facilities, Storage	1	LS	2,960,590.14			\$ 2,960,590	\$ -	\$ -	\$ 2,960,590
	Engineering									
3.6	Design Engineering	1	LS		\$ 14,802,951		\$ -	\$ 14,802,951	\$ -	\$ 14,802,951
3.7	Surveying/Staking	1	LS		\$ 2,072,413		\$ -	\$ 2,072,413	\$ -	\$ 2,072,413
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,960,590		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 888,177		\$ -	\$ 888,177	\$ -	\$ 888,177
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 842,480	\$ -	\$ -	\$ 842,480	\$ 842,480
3.15	Legal Fees (Real estate)	1.00	LS		-	25,274.40	\$ -	\$ -	\$ 25,274	\$ 25,274
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 117,900,548			\$ 10,375,248	\$ -	\$ -	\$ 10,375,248
3.21	Contractor Permits	1	LS		\$ 296,059		\$ -	\$ 296,059	\$ -	\$ 296,059
3.22	Payment & Performance Bond	1	LS			\$ 10,480,000	\$ -	\$ -	\$ 10,480,000	\$ 10,480,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,335,838	\$ 46,001,031	\$ 15,365,954	\$ 74,702,824

NEXTera Energy- TO41 Core 6

Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit

Northport-SprainBrook 320KV DC

Total: \$ 528,901,092

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 71,948,691	\$ 139,544,959	\$ 90,274,548	\$ 301,768,198
2. TRANSITION STATION	\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 9,363,374	\$ 47,125,551	\$ 14,772,680	\$ 71,261,605
SUBTOTAL (Costs):	\$ 81,418,065	\$ 186,843,391	\$ 105,256,264	\$ 373,517,721
CONTRACTOR MARK-UP (OH&P)	\$ 14,655,252	\$ 33,631,810	\$ 18,946,128	\$ 67,233,190
SUBTOTAL:	\$ 96,073,317	\$ 220,475,201	\$ 124,202,392	\$ 440,750,910
CONTINGENCY ON ENTIRE PROJECT	\$ 19,214,663	\$ 44,095,040	\$ 24,840,478	\$ 88,150,182
TOTAL:	\$ 115,287,981	\$ 264,570,242	\$ 149,042,870	\$ 528,901,092

Description of Work: Northport-New Rochelle landing. Part of Northport to Sprainbrook 320 kV DC project segment, 5000kCMIL, Cu, Single Core, XLPE, submarine cable (25.38 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 320kV DC, 5000kCMIL, Cu, Single Core, XLPE, Submarine	294,814	FT	\$ 212	\$ 400	\$ 250	\$ 62,500,585	\$ 117,925,632	\$ 73,703,520	\$ 254,129,737
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 14,921,613	\$ 9,947,742	\$ -	\$ 14,921,613	\$ 9,947,742	\$ 24,869,354
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.5	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	294,814	FT	\$ 7			\$ 2,180,740	\$ -	\$ -	\$ 2,180,740
1.8	Ground Continuity Conductor	294,814	FT	\$ 13			\$ 3,844,081	\$ -	\$ -	\$ 3,844,081
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	4,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 3,200,000	\$ 6,400,000	\$ 6,400,000	\$ 16,000,000
TOTAL - Submarine cable:							\$ 71,948,691	\$ 139,544,959	\$ 90,274,548	\$ 301,768,198
2. TRANSITION STATION										
2.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
2.4	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.8	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
2.9	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
2.10	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
2.11	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
2.12	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
2.13	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
2.14	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, lighting arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
2.18	345kV, lighting arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
2.19	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
2.20	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
2.22	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
2.23	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	863	CY		\$ 17.5	\$ 7.5	\$ -	\$ 15,099	\$ 6,471	\$ 21,570
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	259	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,624	\$ 1,553	\$ 5,177
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	785	CY		\$ 24.5	\$ 10.5	\$ -	\$ 19,236	\$ 8,244	\$ 27,481
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	863	CF		\$ 1.0	\$ 0.5	\$ -	\$ 863	\$ 431	\$ 1,294
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 72,054,691	\$ 139,717,840	\$ 90,483,585	\$ 302,256,116
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
Contractor Mobilization / Demobilization										
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
Project Management, Material Handling & Amenities										
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,022,561.16		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.3	Construction Project Management / Supervision	1	LS		12,090,244.64		\$ -	\$ 12,090,245	\$ -	\$ 12,090,245
3.4	Utility PM and Project Oversight	1	LS		3,022,561.16		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.5	Site Accommodation, Facilities, Storage	1	LS	3,022,561.16			\$ 3,022,561	\$ -	\$ -	\$ 3,022,561
Engineering										
3.6	Design Engineering	1	LS		\$ 15,112,806		\$ -	\$ 15,112,806	\$ -	\$ 15,112,806
3.7	Surveying/Staking	1	LS		\$ 2,115,793		\$ -	\$ 2,115,793	\$ -	\$ 2,115,793
3.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
Testing & Commissioning / Inspection										
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	2	EA		\$ 80,000		\$ -	\$ 160,000	\$ -	\$ 160,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
Permitting and Additional Costs										
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,022,561		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.11	Environmental-special studies/investigation	1	LS		\$ 870,000		\$ -	\$ 870,000	\$ -	\$ 870,000
3.12	Warranties / LOC's	1	LS		\$ 906,768		\$ -	\$ 906,768	\$ -	\$ 906,768
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 206,485	\$ -	\$ -	\$ 206,485	\$ 206,485
3.15	Legal Fees (Real estate)	1.00	LS		-	6,194.55	\$ -	\$ -	\$ 6,195	\$ 6,195
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 72,054,691			\$ 6,340,813	\$ -	\$ -	\$ 6,340,813
3.21	Contractor Permits	1	LS		\$ 302,256		\$ -	\$ 302,256	\$ -	\$ 302,256
3.22	Payment & Performance Bond	1	LS			\$ 10,560,000	\$ -	\$ -	\$ 10,560,000	\$ 10,560,000

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,363,374	\$ 47,125,551	\$ 14,772,680	\$ 71,261,605

NEXtera Energy- TO41 Core 6

Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit

(EGC To Dunwoodie 345 kV)

Total: \$ 210,271,720

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,537,664	\$ 12,454,558	\$ 4,987,906	\$ 19,980,128
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618
SUBTOTAL (Costs):	\$ 55,280,235	\$ 62,197,429	\$ 31,019,314	\$ 148,496,978
CONTRACTOR MARK-UP (OH&P)	\$ 9,950,442	\$ 11,195,537	\$ 5,583,476	\$ 26,729,456
SUBTOTAL:	\$ 65,230,678	\$ 73,392,966	\$ 36,602,790	\$ 175,226,434
CONTINGENCY ON ENTIRE PROJECT	\$ 13,046,136	\$ 14,678,593	\$ 7,320,558	\$ 35,045,287
TOTAL:	\$ 78,276,813	\$ 88,071,559	\$ 43,923,348	\$ 210,271,720

Description of Work: East Garden City - Hempstead Harbor Landing (Shore Road, single circuits). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,147,000	\$ 3,063,000	\$ 10,210,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	53,909	LF	\$ 30	\$ 18	\$ 12	\$ 1,617,264	\$ 970,358	\$ 646,906	\$ 3,234,528
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	10.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 408,400	\$ 1,225,200	\$ 408,400	\$ 2,042,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,537,664	\$ 12,454,558	\$ 4,987,906	\$ 19,980,128
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.21	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,427,358	\$ 951,572	\$ 2,378,930
2.2	Formwork in Trench	351,053	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 702,106	\$ 526,579	\$ 175,526	\$ 1,404,211
2.3	Trench Excavation	29,254	CY		\$ 17.5	\$ 7.5	\$ -	\$ 511,952	\$ 219,408	\$ 731,360
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,828	SF	\$ 50	\$ 25	\$ 14	\$ 91,420	\$ 44,796	\$ 25,598	\$ 161,813
2.5	Supply & Install Thermal Backfill	15,359	CY	\$ 350	\$ 245	\$ 105	\$ 5,375,496	\$ 3,762,847	\$ 1,612,649	\$ 10,750,992
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,150	CY	\$ 200	\$ 125	\$ 50	\$ 1,430,053	\$ 893,783	\$ 357,513	\$ 2,681,349
2.9	Conduit 8" SCH 40PVC	215,635	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 6,167,167	\$ 1,222,652	\$ 523,994	\$ 7,913,812
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	107,818	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 379,518	\$ 339,625	\$ 145,554	\$ 864,697
2.12	Warning Tape	107,818	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 16,173	\$ 26,954	\$ 10,782	\$ 53,909
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	4,987	CY		\$ 17.5	\$ 7.5	\$ -	\$ 87,267	\$ 37,400	\$ 124,667

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	1,496	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,944	\$ 8,976	\$ 29,920
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	323,453	LF			\$ 0.25	\$ -	\$ -	\$ 80,863	\$ 80,863
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,093	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 239,299	\$ 239,299	\$ 119,650	\$ 598,248
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 106,260	\$ 111,573	\$ 47,817	\$ 265,651
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	72	EA		\$ 400	\$ 1,200	\$ -	\$ 28,601	\$ 85,803	\$ 114,404
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	72	EA		\$ 10	\$ 15	\$ -	\$ 715	\$ 1,073	\$ 1,788
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,434	\$ 184,303	\$ 245,737
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	42,569	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,042,930	\$ 446,970	\$ 1,489,901
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	34,241	CF		\$ 1.0	\$ 0.5	\$ -	\$ 34,241	\$ 17,121	\$ 51,362
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	56,604	FT	\$ 7	\$ 3	\$ 2	\$ 418,702	\$ 188,526	\$ 125,684	\$ 732,912
3.12	Ground Continuity Conductor	56,604	FT	\$ 13	\$ 8	\$ 5	\$ 738,063	\$ 426,060	\$ 284,040	\$ 1,448,163
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 49,688,907	\$ 43,412,704	\$ 24,793,749	\$ 117,895,360
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,046,194	\$ 1,364,129	\$ -	\$ 2,046,194	\$ 1,364,129	\$ 3,410,323
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.3	Construction Project Management / Supervision	1	LS		4,715,814.38		\$ -	\$ 4,715,814	\$ -	\$ 4,715,814
4.4	Utility PM and Project Oversight	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.5	Site Accommodation, Facilities, Storage	1	LS	1,178,953.60			\$ 1,178,954	\$ -	\$ -	\$ 1,178,954
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,894,768	\$ -	\$ -	\$ 5,894,768	\$ -	\$ 5,894,768
4.7	LiDAR /GPR	1.0	LS		\$ 212,212	\$ 141,474	\$ -	\$ 212,212	\$ 141,474	\$ 353,686
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 495,161	\$ 330,107	\$ -	\$ 495,161	\$ 330,107	\$ 825,268
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,178,954		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 353,686		\$ -	\$ 353,686	\$ -	\$ 353,686
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 50,426	\$ -	\$ -	\$ 50,426	\$ 50,426
4.16	Legal Fees (Real estate)	1.00	LS		-	1,512.78	\$ -	\$ -	\$ 1,513	\$ 1,513
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,200,000	\$ -	\$ -	\$ 4,200,000	\$ 4,200,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 49,688,906.93			\$ 4,412,375	\$ -	\$ -	\$ 4,412,375
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 117,895	\$ -	\$ -	\$ 117,895	\$ 117,895
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618

NEXtera Energy- TO41 Core 6

Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit

(Ruland To Sprain Brook 345 kV)

Total: \$ 349,868,481

NEXtera Energy- TO41 Core 6								
		Material Supply	Labor Supply	Equip Supply	Total			
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kV)								
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$	3,951,782	\$	19,416,325	\$	7,771,777	\$	31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$	28,082,043	\$	23,492,789	\$	15,680,897	\$	67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$	49,212,741	\$	29,776,525	\$	19,277,107	\$	98,266,373
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$	9,181,315	\$	30,875,539	\$	10,363,420	\$	50,420,274
SUBTOTAL (Costs):	\$	90,427,881	\$	103,561,178	\$	53,093,201	\$	247,082,261
CONTRACTOR MARK-UP (OH&P)	\$	16,277,019	\$	18,641,012	\$	9,556,776	\$	44,474,807
SUBTOTAL:	\$	106,704,900	\$	122,202,190	\$	62,649,977	\$	291,557,067
CONTINGENCY ON ENTIRE PROJECT	\$	21,340,980	\$	24,440,438	\$	12,529,995	\$	58,311,413
TOTAL:	\$	128,045,880	\$	146,642,628	\$	75,179,973	\$	349,868,481

Description of Work: Ruland - Hempstead Harbor Landing (Shore Road, single circuit). 5000 kcmil copper XLPE, single cable per phase..										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	15.89	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 11,120,200	\$ 4,765,800	\$ 15,886,000
1.3	Flaggers	500	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 800,000	\$ 2,400,000	\$ 800,000	\$ 4,000,000
1.4	K Rail / Lane Control / Metal Plates	83,878	LF	\$ 30	\$ 18	\$ 12	\$ 2,516,342	\$ 1,509,805	\$ 1,006,537	\$ 5,032,685
1.5	Police Support	20,000.0	HR		\$ 120	\$ 27	\$ -	\$ 2,400,000	\$ 540,000	\$ 2,940,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	15.89	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 635,440	\$ 1,906,320	\$ 635,440	\$ 3,177,200
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	15.89	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,220,863	\$ 1,480,575	\$ 3,701,438
2.2	Formwork in Trench	643,225	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,286,449	\$ 964,837	\$ 321,612	\$ 2,572,899
2.3	Trench Excavation	53,602	CY		\$ 17.5	\$ 7.5	\$ -	\$ 938,036	\$ 402,015	\$ 1,340,051
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,350	SF	\$ 50	\$ 25	\$ 14	\$ 167,506	\$ 82,078	\$ 46,902	\$ 296,486
2.5	Supply & Install Thermal Backfill	28,141	CY	\$ 350	\$ 245	\$ 105	\$ 9,849,377	\$ 6,894,564	\$ 2,954,813	\$ 19,698,755
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,101	CY	\$ 200	\$ 125	\$ 50	\$ 2,620,247	\$ 1,637,654	\$ 655,062	\$ 4,912,963
2.9	Conduit 8" SCH 40PVC	335,512	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 9,595,652	\$ 1,902,355	\$ 815,295	\$ 12,313,302
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	167,756	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 590,502	\$ 528,432	\$ 226,471	\$ 1,345,404
2.12	Warning Tape	167,756	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 25,163	\$ 41,939	\$ 16,776	\$ 83,878
2.13	Trench Box Shoring (Vault)	49	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 885,876	\$ 1,328,814	\$ 2,214,689
2.14	Splice Vault Excavation	8,145	CY		\$ 17.5	\$ 7.5	\$ -	\$ 142,536	\$ 61,087	\$ 203,622
2.15	Splice Vault Supply & Installation	49	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,715,000	\$ 808,500	\$ 1,886,500	\$ 4,410,000
2.16	Splice Vault Backfill	2,443	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,209	\$ 14,661	\$ 48,869
2.17	Jack and Bore along Route	805	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 644,000	\$ 1,288,000	\$ 1,288,000	\$ 3,220,000
2.18	HDD along Route	1,200	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 960,000	\$ 1,920,000	\$ 1,920,000	\$ 4,800,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LiDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 43,680	\$ 29,120	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXtera Energy- TO41 Core 6

Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits

Total: \$ 133,317,472

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576
SUBTOTAL (Costs):	\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757
CONTRACTOR MARK-UP (OH&P)	\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136
SUBTOTAL:	\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893
CONTINGENCY ON ENTIRE PROJECT	\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579
TOTAL:	\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472

Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversight	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LiDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXtera Energy- TO41 Core 6

Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,216
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	\$ -	\$ 1,492	\$ 2,239	\$ 3,731
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LIDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

NEXTera Energy- TO41 Core 6

Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit

(Pilgram to Northport kV)

Total: \$ 165,653,108

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365
SUBTOTAL (Costs):	\$ 42,682,442	\$ 49,673,108	\$ 24,631,109	\$ 116,986,658
CONTRACTOR MARK-UP (OH&P)	\$ 7,682,840	\$ 8,941,159	\$ 4,433,600	\$ 21,057,599
SUBTOTAL:	\$ 50,365,281	\$ 58,614,267	\$ 29,064,708	\$ 138,044,257
CONTINGENCY ON ENTIRE PROJECT	\$ 10,073,056	\$ 11,722,853	\$ 5,812,942	\$ 27,608,851
TOTAL:	\$ 60,438,338	\$ 70,337,121	\$ 34,877,650	\$ 165,653,108

Description of Work: Ruland - 138kV (399/567/900 MVA) 5000 kcmil copper XLPE, single cable per phase (8.34 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.34	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,838,000	\$ 2,502,000	\$ 8,340,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,035	LF	\$ 30	\$ 18	\$ 12	\$ 1,321,056	\$ 792,634	\$ 528,422	\$ 2,642,112
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.34	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 333,600	\$ 1,000,800	\$ 333,600	\$ 1,668,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.34	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,165,932	\$ 777,288	\$ 1,943,220
2.2	Formwork in Trench	346,914	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 693,827	\$ 520,370	\$ 173,457	\$ 1,387,654
2.3	Trench Excavation	28,909	CY		\$ 17.5	\$ 7.5	\$ -	\$ 505,916	\$ 216,821	\$ 722,737
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,807	SF	\$ 50	\$ 25	\$ 14	\$ 90,342	\$ 44,268	\$ 25,296	\$ 159,905
2.5	Supply & Install Thermal Backfill	15,177	CY	\$ 350	\$ 245	\$ 105	\$ 5,312,115	\$ 3,718,480	\$ 1,593,634	\$ 10,624,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,066	CY	\$ 200	\$ 125	\$ 50	\$ 1,413,191	\$ 883,244	\$ 353,298	\$ 2,649,733
2.9	Conduit 8" SCH 40PVC	176,141	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 5,037,627	\$ 998,718	\$ 428,022	\$ 6,464,367
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	88,070	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 310,008	\$ 277,422	\$ 118,895	\$ 706,325
2.12	Warning Tape	88,070	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,211	\$ 22,018	\$ 8,807	\$ 44,035
2.13	Trench Box Shoring (Vault)	24	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 433,898	\$ 650,847	\$ 1,084,746
2.14	Splice Vault Excavation	3,285	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,493	\$ 24,640	\$ 82,133
2.15	Splice Vault Supply & Installation	24	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 840,000	\$ 396,000	\$ 924,000	\$ 2,160,000
2.16	Splice Vault Backfill	986	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,798	\$ 5,914	\$ 19,712
2.17	Jack and Bore along Route	95	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 76,000	\$ 152,000	\$ 152,000	\$ 380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	264,211	LF			\$ 0.25	\$ -	\$ -	\$ 66,053	\$ 66,053

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,481	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 230,729	\$ 230,729	\$ 115,364	\$ 576,822
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,578	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 102,455	\$ 107,577	\$ 46,105	\$ 256,136
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,264	\$ 84,791	\$ 113,055
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	71	EA		\$ 10	\$ 15	\$ -	\$ 707	\$ 1,060	\$ 1,766
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,710	\$ 182,130	\$ 242,840
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	40,572	CY		\$ 24.5	\$ 10.5	\$ -	\$ 994,013	\$ 426,006	\$ 1,420,019
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	24	EA			\$ 4,000	\$ -	\$ -	\$ 96,000	\$ 96,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	32,195	CF		\$ 1.0	\$ 0.5	\$ -	\$ 32,195	\$ 16,097	\$ 48,292
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	138,711	FT	\$ 145	\$ 87	\$ 58	\$ 20,113,078	\$ 12,067,847	\$ 8,045,231	\$ 40,226,155
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	72	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 424,656	\$ 708,947	\$ 202,556	\$ 1,336,159
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	24	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 639,816	\$ 383,890	\$ 255,926	\$ 1,279,632
3.11	Fiber Optic Cable	46,237	FT	\$ 7	\$ 3	\$ 2	\$ 342,015	\$ 153,997	\$ 102,665	\$ 598,676
3.12	Ground Continuity Conductor	46,237	FT	\$ 13	\$ 8	\$ 5	\$ 602,884	\$ 348,026	\$ 232,017	\$ 1,182,926
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 38,346,592	\$ 35,001,236	\$ 19,719,466	\$ 93,067,293
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,641,621	\$ 1,094,414	\$ -	\$ 1,641,621	\$ 1,094,414	\$ 2,736,035
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.3	Construction Project Management / Supervision	1	LS		3,722,691.74		\$ -	\$ 3,722,692	\$ -	\$ 3,722,692
4.4	Utility PM and Project Oversight	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.5	Site Accommodation, Facilities, Storage	1	LS	930,672.93			\$ 930,673	\$ -	\$ -	\$ 930,673
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,653,365	\$ -	\$ -	\$ 4,653,365	\$ -	\$ 4,653,365
4.7	LiDAR /GPR	1.0	LS		\$ 167,521	\$ 111,681	\$ -	\$ 167,521	\$ 111,681	\$ 279,202
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 390,883	\$ 260,588	\$ -	\$ 390,883	\$ 260,588	\$ 651,471
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 930,673		\$ -	\$ 930,673	\$ -	\$ 930,673
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 279,202		\$ -	\$ 279,202	\$ -	\$ 279,202
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 34,478	\$ -	\$ -	\$ 34,478	\$ 34,478
4.16	Legal Fees (Real estate)	1.00	LS		-	1,034.34	\$ -	\$ -	\$ 1,034	\$ 1,034
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,300,000	\$ -	\$ -	\$ 3,300,000	\$ 3,300,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 38,346,591.60			\$ 3,405,177	\$ -	\$ -	\$ 3,405,177
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 93,067	\$ -	\$ -	\$ 93,067	\$ 93,067
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365

NEXtera Energy- TO41 Core 6

Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO41 Core 6

Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXTera Energy- TO41 Core 6

Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit

(EGC-Jamaica 138kv)

Total: \$ 232,454,478

NEXTera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit(EGC-Jamaica 138kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126
SUBTOTAL (Costs):	\$ 59,773,498	\$ 69,663,101	\$ 34,726,168	\$ 164,162,767
CONTRACTOR MARK-UP (OH&P)	\$ 10,759,230	\$ 12,539,358	\$ 6,250,710	\$ 29,549,298
SUBTOTAL:	\$ 70,532,728	\$ 82,202,459	\$ 40,976,879	\$ 193,712,065
CONTINGENCY ON ENTIRE PROJECT	\$ 14,106,546	\$ 16,440,492	\$ 8,195,376	\$ 38,742,413
TOTAL:	\$ 84,639,274	\$ 98,642,950	\$ 49,172,254	\$ 232,454,478

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit(EGC-Jamaica 138kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.59	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	480,266	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 960,531	\$ 720,398	\$ 240,133	\$ 1,921,062
2.3	Trench Excavation	40,022	CY		\$ 17.5	\$ 7.5	\$ -	\$ 700,387	\$ 300,166	\$ 1,000,553
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,501	SF	\$ 50	\$ 25	\$ 14	\$ 125,069	\$ 61,284	\$ 35,019	\$ 221,372
2.5	Supply & Install Thermal Backfill	21,012	CY	\$ 350	\$ 245	\$ 105	\$ 7,354,067	\$ 5,147,847	\$ 2,206,220	\$ 14,708,134
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,782	CY	\$ 200	\$ 125	\$ 50	\$ 1,956,415	\$ 1,222,760	\$ 489,104	\$ 3,668,279
2.9	Conduit 8" SCH 40PVC	244,781	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 7,000,731	\$ 1,387,907	\$ 594,817	\$ 8,983,455
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	122,390	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 430,814	\$ 385,530	\$ 165,227	\$ 981,571
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 30,598	\$ 12,239	\$ 61,195
2.13	Trench Box Shoring (Vault)	38	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 687,006	\$ 1,030,508	\$ 1,717,514
2.14	Splice Vault Excavation	5,202	CY		\$ 17.5	\$ 7.5	\$ -	\$ 91,031	\$ 39,013	\$ 130,044
2.15	Splice Vault Supply & Installation	38	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,330,000	\$ 627,000	\$ 1,463,000	\$ 3,420,000
2.16	Splice Vault Backfill	1,561	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,847	\$ 9,363	\$ 31,211
2.17	Jack and Bore along Route	250	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 200,000	\$ 400,000	\$ 400,000	\$ 1,000,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	367,171	LF			\$ 0.25	\$ -	\$ -	\$ 91,793	\$ 91,793

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	22,979	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 321,707	\$ 321,707	\$ 160,854	\$ 804,269
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,383	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 142,853	\$ 149,996	\$ 64,284	\$ 357,134
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	98	EA		\$ 400	\$ 1,200	\$ -	\$ 39,128	\$ 117,385	\$ 156,513
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	98	EA		\$ 10	\$ 15	\$ -	\$ 978	\$ 1,467	\$ 2,446
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	210	EA		\$ 400	\$ 1,200	\$ -	\$ 84,046	\$ 252,139	\$ 336,186
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	56,762	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,390,679	\$ 596,005	\$ 1,986,684
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	38	EA			\$ 4,000	\$ -	\$ -	\$ 152,000	\$ 152,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	45,224	CF		\$ 1.0	\$ 0.5	\$ -	\$ 45,224	\$ 22,612	\$ 67,836
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	114	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 672,372	\$ 1,122,499	\$ 320,714	\$ 2,115,585
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	38	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 1,013,042	\$ 607,825	\$ 405,217	\$ 2,026,084
3.11	Fiber Optic Cable	64,255	FT	\$ 7	\$ 3	\$ 2	\$ 475,294	\$ 214,008	\$ 142,672	\$ 831,973
3.12	Ground Continuity Conductor	64,255	FT	\$ 13	\$ 8	\$ 5	\$ 837,820	\$ 483,647	\$ 322,431	\$ 1,643,899
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 53,699,423	\$ 48,982,817	\$ 27,874,401	\$ 130,556,641
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,305,717	\$ 1,537,144	\$ -	\$ 2,305,717	\$ 1,537,144	\$ 3,842,861
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.3	Construction Project Management / Supervision	1	LS		5,222,265.65		\$ -	\$ 5,222,266	\$ -	\$ 5,222,266
4.4	Utility PM and Project Oversight	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.5	Site Accommodation, Facilities, Storage	1	LS	1,305,566.41			\$ 1,305,566	\$ -	\$ -	\$ 1,305,566
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,527,832	\$ -	\$ -	\$ 6,527,832	\$ -	\$ 6,527,832
4.7	LIDAR /GPR	1.0	LS		\$ 235,002	\$ 156,668	\$ -	\$ 235,002	\$ 156,668	\$ 391,670
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 548,338	\$ 365,559	\$ -	\$ 548,338	\$ 365,559	\$ 913,896
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,305,566		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 391,670		\$ -	\$ 391,670	\$ -	\$ 391,670
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,640,000	\$ -	\$ -	\$ 4,640,000	\$ 4,640,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 53,699,423.07			\$ 4,768,509	\$ -	\$ -	\$ 4,768,509
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 130,557	\$ -	\$ -	\$ 130,557	\$ 130,557
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126

NEXtera Energy- TO41 Core 6

Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit

Total: \$ 5,354,910

NEXtera Energy- TO41 Core 6				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351
SUBTOTAL (Costs):	\$ 1,083,440	\$ 2,001,924	\$ 696,353	\$ 3,781,716
CONTRACTOR MARK-UP (OH&P)	\$ 195,019	\$ 360,346	\$ 125,343	\$ 680,709
SUBTOTAL:	\$ 1,278,459	\$ 2,362,270	\$ 821,696	\$ 4,462,425
CONTINGENCY ON ENTIRE PROJECT	\$ 255,692	\$ 472,454	\$ 164,339	\$ 892,485
TOTAL:	\$ 1,534,151	\$ 2,834,724	\$ 986,035	\$ 5,354,910

Description of Work: Rebuild 0.2 mile of UG line (trench, conduits and cable), single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.20	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	1,056	LF	\$ 30	\$ 18	\$ 12	\$ 31,680	\$ 19,008	\$ 12,672	\$ 63,360
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	0.20	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 8,000	\$ 24,000	\$ 8,000	\$ 40,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.20	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 27,960	\$ 18,640	\$ 46,600
2.2	Formwork in Trench	8,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 16,512	\$ 12,384	\$ 4,128	\$ 33,024
2.3	Trench Excavation	688	CY		\$ 17.5	\$ 7.5	\$ -	\$ 12,040	\$ 5,160	\$ 17,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	43	SF	\$ 50	\$ 25	\$ 14	\$ 2,150	\$ 1,054	\$ 602	\$ 3,806
2.5	Supply & Install Thermal Backfill	361	CY	\$ 350	\$ 245	\$ 105	\$ 126,420	\$ 88,494	\$ 37,926	\$ 252,840
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	168	CY	\$ 200	\$ 125	\$ 50	\$ 33,632	\$ 21,020	\$ 8,408	\$ 63,060
2.9	Conduit 8" SCH 40PVC	4,224	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 120,806	\$ 23,950	\$ 10,264	\$ 155,021
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	2,112	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 7,434	\$ 6,653	\$ 2,851	\$ 16,938
2.12	Warning Tape	2,112	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 317	\$ 528	\$ 211	\$ 1,056
2.13	Trench Box Shoring (Vault)	1	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 18,079	\$ 27,119	\$ 45,198
2.14	Splice Vault Excavation	137	CY		\$ 17.5	\$ 7.5	\$ -	\$ 2,396	\$ 1,027	\$ 3,422
2.15	Splice Vault Supply & Installation	1	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 35,000	\$ 16,500	\$ 38,500	\$ 90,000
2.16	Splice Vault Backfill	41	CY		\$ 14.0	\$ 6.0	\$ -	\$ 575	\$ 246	\$ 821
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	6,336	LF			\$ 0.25	\$ -	\$ -	\$ 1,584	\$ 1,584
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 5,696	\$ 5,696	\$ 2,848	\$ 14,241
2.21	PVMT, AGGREGATE, 10", BASE COURSE	113	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 2,529	\$ 2,656	\$ 1,138	\$ 6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$ 400	\$ 1,200	\$ -	\$ 673	\$ 2,018	\$ 2,691
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$ 10	\$ 15	\$ -	\$ 17	\$ 25	\$ 42
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LiDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

NEXtera Energy- TO41 Core 6

Other Comp. 138kV Upgrades

Total: \$ 16,870,335

Other Comp. 138kV Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Comp. 138kV Upgrades				
1. West Bus-Kings CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378
CONTRACTOR MARK-UP (OH&P)	\$ 829,380	\$ 872,432	\$ 442,722	\$ 2,144,534
SUBTOTAL:	\$ 5,437,050	\$ 5,719,276	\$ 2,902,287	\$ 14,058,612
CONTINGENCY ON ENTIRE PROJECT	\$ 1,087,410	\$ 1,143,855	\$ 580,457	\$ 2,811,722
TOTAL:	\$ 6,524,459	\$ 6,863,131	\$ 3,482,744	\$ 16,870,335

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1. West Bus-Kings CT Upgrade										
1.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
1.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
1.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
							\$ -	from	\$ -	\$ -
TOTAL - West Bus-Kings-Pligrim CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,155,935.10	\$ 2,096,798.80	\$ 2,015,966.10	\$ 8,268,700.00
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 123,383	\$ 82,255	\$ -	\$ 123,383	\$ 82,255	\$ 205,638
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.3	Construction Project Management / Supervision	1	LS		330,748.00		\$ -	\$ 330,748	\$ -	\$ 330,748
4.4	Utility PM and Project Oversight	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.5	Site Accommodation, Facilities, Storage	1	LS	82,687.00			\$ 82,687	\$ -	\$ -	\$ 82,687
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 413,435	\$ -	\$ -	\$ 413,435	\$ -	\$ 413,435
4.7	LiDAR	1.00	LS		\$ 14,884	\$ 9,922	\$ -	\$ 14,884	\$ 9,922	\$ 24,806
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,729	\$ 23,152	\$ -	\$ 34,729	\$ 23,152	\$ 57,881
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,687		\$ -	\$ 82,687	\$ -	\$ 82,687
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,806		\$ -	\$ 24,806	\$ -	\$ 24,806
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 320,000	\$ -	\$ -	\$ 320,000	\$ 320,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,155,935.10			\$ 369,047	\$ -	\$ -	\$ 369,047
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,269	\$ -	\$ -	\$ 8,269	\$ 8,269
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378

NEXtera Energy- TO41 Core 6	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO41 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials."
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 _Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contracct value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided by the developer.
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable.
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
42	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 3 circuits, 2 cable per circuit, so there are 6 passes.
43	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications -	
44	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
45	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
46	Substation pad is based on 8" base and 6" surfacing rock.
47	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
48	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
49	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
50	All substation segments construction period is based on milestone schedule provided
51	Assume concrete cantilever retaining wall for Sprain Brook expansion, the assumed dimension details please see the tab
52	Assume 70% rock for Sprain brook 345kV expansion excavation
53	Assume 90% rock for new Sprain brook HVDC yard excavation

<u>NEXtera Energy- TO42 Core 7</u>		
REVISION: 1		

<i>NEXtera Energy- TO42 Core 7 -DIRECT COST</i>		
<i>Substation Direct Costs</i>		<i>Total Each Segment</i>
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 54,287,315
Direct Labor, Material & Equipment Costs	2.Station 31 East Garden City 345/138 kV Substation Upgrades	\$ 158,123,262
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,095,138
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 318,036,771
Direct Labor, Material & Equipment Costs	12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$ 316,467,326
Direct Labor, Material & Equipment Costs	13- Station 30a New Northport HVDC 1200MW Converter Station	\$ 316,424,093
Direct Labor, Material & Equipment Costs	14 - Northport 138kV GIS Substation	\$ 25,174,983
Direct Labor, Material & Equipment Costs	15.Pilgrim 138kV Substation Upgrades	\$ 1,090,486
Direct Labor, Material & Equipment Costs	16. - Comp 101 Buchanan 345kV & HVDC Substation Upgrade	\$ 692,420,202
Direct Labor, Material & Equipment Costs	17. Existing Ruland Road 138 kV Substation Upgrades	\$ 1,077,395
Direct Labor, Material & Equipment Costs	18. Existing East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 2,148,414,218
CONTRACTOR MARK-UP (OH&P)		\$ 216,246,159
SUBTOTAL (AFTER MU):		\$ 2,364,660,377
CONTINGENCY ON ENTIRE PROJECT		\$ 472,932,075
Substation TOTAL:		\$ 2,837,592,452

Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$ 107,007,205
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$ 89,348,530
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Two circuits (two lines, single circuit each) EGC-Dunwoodie 345KV / Ruland-SprainBrook 345KV	\$ 296,059,014
Direct Labor, Material & Equipment Costs	Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-SprainBrook 320KV DC	\$ 302,256,116
Direct Labor, Material & Equipment Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Dunwoodie 345 kV)	\$ 117,895,360
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit (Pilgram to Northport kV)	\$ 93,067,293
Direct Labor, Material & Equipment Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit (EGC-Jamaica 138kv)	\$ 130,556,641
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 8,268,700
Direct Labor, Material & Equipment Costs	Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)	\$ 4,844,809,741
Direct Labor, Material & Equipment Costs	Comp 254 - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)	\$ 25,955,403
SUBTOTAL (Costs):		\$ 6,646,526,382
CONTRACTOR MARK-UP (OH&P)		\$ 1,196,374,749
SUBTOTAL (AFTER MU):		\$ 7,842,901,130
CONTINGENCY ON ENTIRE PROJECT		\$ 1,568,580,226
Transmission Line TOTAL:		\$ 9,411,481,356
NEXTera Energy- TO42 Core 7Total Direct Cost		\$ 12,249,073,808

NEXTera Energy- TO42 Core 7 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 15,736,579
Indirect Costs	2.Station 31 East Garden City 345/138 kV Substation Upgrades	\$ 76,129,096
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 334,752
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 97,705,743
Indirect Costs	12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$ 35,329,140
Indirect Costs	13- Station 30a New Northport HVDC 1200MW Converter Station	\$ 30,991,771
Indirect Costs	14 - Northport 138kV GIS Substation	\$ 4,620,516
Indirect Costs	15.Pilgrim 138kV Substation Upgrades	\$ 347,380
Indirect Costs	16. - Comp 101 Buchanan 345kV & HVDC Substation Upgrade	\$ 54,131,316
Indirect Costs	17. Existing Ruland Road 138 kV Substation Upgrades	\$ 356,246
Indirect Costs	18. Existing East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 392,818,828
CONTRACTOR MARK-UP (OH&P)		\$ 70,707,389
SUBTOTAL (AFTER MU):		\$ 463,526,217
CONTINGENCY ON ENTIRE PROJECT		\$ 92,705,243
Substation TOTAL:		\$ 556,231,460

Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Single circuit (Ruland To Sprain Brook 345 kV)	\$ 27,419,655
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$ 23,027,188
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Two circuits (two lines, single circuit each) EGC-Dunwoodie 345KV / Ruland-SprainBrook 345KV	\$ 74,702,824
Indirect Costs	Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-SprainBrook 320KV DC	\$ 71,261,605
Indirect Costs	Comp 3 - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Single circuit (EGC To Dunwoodie 345 kV)	\$ 30,601,618
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kV)	\$ 50,420,274
Indirect Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit (Pilgram to Northport kV)	\$ 23,919,365
Indirect Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit (EGC-Jamaica 138kv)	\$ 33,606,126
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,645,378
Indirect Costs	Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)	\$ 1,009,338,319
Indirect Costs	Comp 254 - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)	\$ 6,928,909
SUBTOTAL (Costs):		\$ 1,465,800,048
CONTRACTOR MARK-UP (OH&P)		\$ 263,844,009
SUBTOTAL (AFTER MU):		\$ 1,729,644,056
CONTINGENCY ON ENTIRE PROJECT		\$ 345,928,811
Transmission Line TOTAL:		\$ 2,075,572,867
NEXTera Energy- TO42 Core 7 Total Indirect Cost		\$ 2,631,804,328
NEXTera Energy- TO42 Core 7 Total		\$ 14,880,878,136

1. Station 29 New Ruland Road 345/138 kV Substation

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736
2. SUBSTATION FOUNDATIONS	\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,219
3. SUBSTATION STRUCTURES	\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495
4. MAJOR EQUIPMENT	\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278
5. LOW VOLTAGE & CONTROL CABLE	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
6. CONDUIT & CABLE TRENCH	\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,296
7. GROUND GRID	\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,314
8. CONTROL ENCLOSURE	\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,858
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 29,397,161	\$ 19,987,089	\$ 9,149,644	\$ 58,533,894
SUBTOTAL (Costs):	\$ 35,142,161	\$ 23,434,089	\$ 11,447,644	\$ 70,023,894
CONTRACTOR MARK-UP (OH&P)	\$ 5,636,189	\$ 3,804,496	\$ 1,784,816	\$ 11,225,501
SUBTOTAL:	\$ 40,778,350	\$ 27,238,585	\$ 13,232,460	\$ 81,249,395
CONTINGENCY ON ENTIRE PROJECT	\$ 8,155,670	\$ 5,447,717	\$ 2,646,492	\$ 16,249,879
TOTAL:	\$ 48,934,020	\$ 32,686,303	\$ 15,878,952	\$ 97,499,274

1.Sta29 Ruland Rd 345 kv Sub

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,237,904	\$ 967,768	\$ 556,064	\$ 2,761,736
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.10	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.11	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.12	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.13	345/138KV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 1,784,377	\$ 2,039,288	\$ 1,274,555	\$ 5,098,219
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	15	EA	4,810.00	2,886.00	1,924.00	\$ 72,150	\$ 43,290	\$ 28,860	\$ 144,300
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.10	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.11	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.12	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.20	AL. Bus fittings	1	LS	22,500.00	22,500.00	11,250.00	\$ 22,500	\$ 22,500	\$ 11,250	\$ 56,250
3.21	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 725,707	\$ 520,606	\$ 307,182	\$ 1,553,495
4. MAJOR EQUIPMENT										
4.1	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600
4.2	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
4.3	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.4	345/138KV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800
4.5	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.6	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 20,829,008	\$ 5,933,406	\$ 3,767,864	\$ 30,530,278
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	37,500	LF	5.30	1.43	0.29	\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 198,656	\$ 53,719	\$ 10,744	\$ 263,119
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,750	LF	11.15	10.80	5.40	\$ 75,263	\$ 72,900	\$ 36,450	\$ 184,613
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.14	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,855,740	\$ 2,142,022	\$ 1,153,533	\$ 7,151,296
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,705	LF	2.09	3.42	1.46	\$ 26,566	\$ 43,391	\$ 18,596	\$ 88,554
7.2	Caweld, DSA, 4/0 , T, CROSS	351	EA	165.00	75.00		\$ 57,915	\$ 26,325	\$ -	\$ 84,240
7.3	Ground Rod, 3/4" x 15'	312	EA	135.00	67.50	7.50	\$ 42,120	\$ 21,060	\$ 2,340	\$ 65,520
TOTAL - GROUND GRID							\$ 126,601	\$ 90,776	\$ 20,936	\$ 238,314
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Anr	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.15	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,148,429	\$ 2,577,294	\$ 965,135	\$ 6,690,858
1. Station 29 New Ruland Road 345/138 kV Substation							\$ 31,906,422	\$ 14,324,879	\$ 8,056,013	\$ 54,287,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		582,256.23	249,538.38	\$ -	\$ 582,256	\$ 249,538	\$ 831,795
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,711,892.59		\$ -	\$ 1,711,893	\$ -	\$ 1,711,893
9.4	Utility PM and Project Oversight	1	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.5	Site Accommodation, Facilities, Storage	1	LS	427,973.15			\$ 427,973	\$ -	\$ -	\$ 427,973
	Engineering									
9.6	Design Engineering	1.00	LS		3,423,785.17		\$ -	\$ 3,423,785	\$ -	\$ 3,423,785
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		299,581.20		\$ -	\$ 299,581	\$ -	\$ 299,581
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,604,899.30		\$ -	\$ 1,604,899	\$ -	\$ 1,604,899
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		427,973.15		\$ -	\$ 427,973	\$ -	\$ 427,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		128,391.94		\$ -	\$ 128,392	\$ -	\$ 128,392
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,940,000	\$ -	\$ -	\$ 1,940,000	\$ 1,940,000
9.20	Sales Tax on Materials	8.80%	LS	31,906,422.41			\$ 2,807,765	\$ -	\$ -	\$ 2,807,765
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		54,287.31		\$ -	\$ 54,287	\$ -	\$ 54,287
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,235,738	\$ 9,109,210	\$ 3,391,631	\$ 15,736,579

NEXTera Energy- TO42 Core 7

2.Station 31 East Garden City 345/138 kV Substation Upgrades

Total: \$ 326,629,659

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 31 East Garden City 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS	\$ 4,940,586	\$ 5,259,191	\$ 3,304,826	\$ 13,504,603
3. SUBSTATION STRUCTURES	\$ 1,403,520	\$ 901,180	\$ 499,166	\$ 2,803,867
4. MAJOR EQUIPTMENT	\$ 83,434,236	\$ 15,021,057	\$ 9,912,305	\$ 108,367,598
5. LOW VOLTAGE & CONTROL CABLE	\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
6. CONDUIT & CABLE TRENCH	\$ 8,724,708	\$ 4,948,997	\$ 2,709,691	\$ 16,383,397
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE	\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,565,337	\$ 26,272,726	\$ 39,291,033	\$ 76,129,096
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 99,049,709	\$ 48,374,371	\$ 51,608,278	\$ 199,032,358
SUBTOTAL (Costs):	\$ 116,659,709	\$ 58,940,371	\$ 58,652,278	\$ 234,252,358
CONTRACTOR MARK-UP (OH&P)	\$ 18,885,548	\$ 9,341,347	\$ 9,712,130	\$ 37,939,024
SUBTOTAL:	\$ 135,545,257	\$ 68,281,718	\$ 68,364,407	\$ 272,191,382
CONTINGENCY ON ENTIRE PROJECT	\$ 27,109,051	\$ 13,656,344	\$ 13,672,881	\$ 54,438,276
TOTAL:	\$ 162,654,308	\$ 81,938,062	\$ 82,037,289	\$ 326,629,659

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 31 East Garden City 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.4	345kV, Bus support-3 Ph, low	166	CY	703.89	804.44	502.78	\$ 116,775	\$ 133,457	\$ 83,410	\$ 333,641
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	54	CY	703.89	804.44	502.78	\$ 37,658	\$ 43,038	\$ 26,898	\$ 107,594
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.17	345kV, Phase Angle Regulator with oil containment	890	CY	703.89	804.44	502.78	\$ 626,458	\$ 715,952	\$ 447,470	\$ 1,789,879
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.21	345kV, Surge arrester	80	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	1,885	CY	703.89	804.44	502.78	\$ 1,326,795	\$ 1,516,337	\$ 947,711	\$ 3,790,843
2.31	Precast Firewall for transformer, PARs, reactors	28,530	SF	25.00	15.00	10.00	\$ 713,250	\$ 427,950	\$ 285,300	\$ 1,426,500
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 4,940,586	\$ 5,259,191	\$ 3,304,826	\$ 13,504,603
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.4	345kV, Bus support-3 Ph, low	15	EA	8,346.00	5,758.74	3,839.16	\$ 125,190	\$ 86,381	\$ 57,587	\$ 269,159
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	18	EA	8,346.00	5,758.74	3,839.16	\$ 150,228	\$ 103,657	\$ 69,105	\$ 322,990
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	5	EA	8,346.00	5,758.74	3,839.16	\$ 41,730	\$ 28,794	\$ 19,196	\$ 89,720
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	4,896.84	4,896.84	2,448.42	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	1,050	LF	25.00	184.94	123.29	\$ 26,250	\$ 194,185	\$ 129,457	\$ 349,892
3.20	AL. Bus fittings	1	LS	31,500.00	31,500.00	15,750.00	\$ 31,500	\$ 31,500	\$ 15,750	\$ 78,750
3.21	Steel grating and support beams-transformer moat	346,240	LB	2.73	1.17	0.50	\$ 945,864	\$ 404,755	\$ 173,466	\$ 1,524,085
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,403,520	\$ 901,180	\$ 499,166	\$ 2,803,867
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	18.00	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	15	EA	17,400.00	5,460.00	2,340.00	\$ 261,000	\$ 81,900	\$ 35,100	\$ 378,000
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.6	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.11	Transport & Testing- Shunt Reactor	6	EA		272,900.20	178,266.80	\$ -	\$ 1,637,401	\$ 1,069,601	\$ 2,707,002
4.12	345kV, Phase Angle Regulator with oil containment	2	EA	25,764,000.00	3,520.00	880.00	\$ 51,528,000	\$ 7,040	\$ 1,760	\$ 51,536,800
4.11	Transport & Testing- PARs	2	EA		1,215,400.00	806,600.00	\$ -	\$ 2,430,800	\$ 1,613,200	\$ 4,044,000
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	15	EA	6,669.00	5,460.00	2,340.00	\$ 100,035	\$ 81,900	\$ 35,100	\$ 217,035
4.18	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kv	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 83,434,236	\$ 15,021,057	\$ 9,912,305	\$ 108,367,598
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	16,800	LF	5.30	1.43	0.29	\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 88,998	\$ 24,066	\$ 4,813	\$ 117,877
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,450	LF	11.15	10.80	5.40	\$ 38,468	\$ 37,260	\$ 18,630	\$ 94,358
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
6.16										
6.17							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,724,708	\$ 4,948,997	\$ 2,709,691	\$ 16,383,397
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0 , T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	10	EA	21,328.12	17,062.49	4,265.62	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
8.4	Backup Line Relays (87L): GE L90	10	EA	21,328.12	17,062.49	4,265.62	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.22	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.23	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,830,727	\$ 4,413,122	\$ 1,666,606	\$ 11,910,455
2.Station 31 East Garden City 345/138 kv Substation Upgrades							\$ 106,094,372	\$ 32,667,646	\$ 19,361,244	\$ 158,123,262
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,821,011.14	780,433.35	\$ -	\$ 1,821,011	\$ 780,433	\$ 2,601,444
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,916,130.46		\$ -	\$ 4,916,130	\$ -	\$ 4,916,130
9.4	Utility PM and Project Oversight	1	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.5	Site Accommodation, Facilities, Storage	1	LS	1,229,032.62			\$ 1,229,033	\$ -	\$ -	\$ 1,229,033
	Engineering									
9.6	Design Engineering	1.00	LS		9,832,260.93		\$ -	\$ 9,832,261	\$ -	\$ 9,832,261
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		860,322.83		\$ -	\$ 860,323	\$ -	\$ 860,323
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,608,872.31		\$ -	\$ 4,608,872	\$ -	\$ 4,608,872
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,229,032.62		\$ -	\$ 1,229,033	\$ -	\$ 1,229,033
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		368,709.78		\$ -	\$ 368,710	\$ -	\$ 368,710
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 6,520,000	\$ -	\$ -	\$ 6,520,000	\$ 6,520,000
9.20	Sales Tax on Materials	8.80%	LS	106,094,371.82			\$ 9,336,305	\$ -	\$ -	\$ 9,336,305
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		158,123.26		\$ -	\$ 158,123	\$ -	\$ 158,123
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,565,337	\$ 26,272,726	\$ 39,291,033	\$ 76,129,096

NEXTera Energy- TO42 Core 7

3.Station 48 Valley Stream 345/138 kV Substation Upgrades

Total: \$ 143,522,216

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPTMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.Station 48 Valley Stream 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	620,000.00	415,000.00	\$ -	\$ 620,000	\$ 415,000	\$ 1,035,000
1.3	New Access Road - 20'	889	SY	4.85	7.20	4.80	\$ 4,312	\$ 6,401	\$ 4,267	\$ 14,980
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	11,761	CY		9.00	6.00	\$ -	\$ 105,849	\$ 70,566	\$ 176,415
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,057	CY		2.40	1.60	\$ -	\$ 16,937	\$ 11,291	\$ 28,228
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,704	CY	25.00	2.40	1.60	\$ 117,600	\$ 11,290	\$ 7,526	\$ 136,416
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,712	SY	11.00	6.00	4.00	\$ 95,832	\$ 52,272	\$ 34,848	\$ 182,952
1.11	Site Surfacing - Aggregate 6" Thick	8,712	SY	16.50	4.50	3.00	\$ 143,748	\$ 39,204	\$ 26,136	\$ 209,088
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,222	LF	13.85	13.85	6.92	\$ 30,770	\$ 30,770	\$ 15,385	\$ 76,926
1.13	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
1.14	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,583	LF	2.41	3.16	0.72	\$ 6,225	\$ 8,162	\$ 1,860	\$ 16,247
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	333	SY	19.50	26.00	19.50	\$ 6,500	\$ 8,667	\$ 6,500	\$ 21,667

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

4.Barrett 138 kV Substation Upgrades

Total: \$ 77,248,534

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
4.Barrett 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS	\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES	\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT	\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID	\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE	\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 22,313,583	\$ 13,117,388	\$ 8,801,554	\$ 44,232,524
SUBTOTAL (Costs):	\$ 28,058,583	\$ 16,564,388	\$ 11,099,554	\$ 55,722,524
CONTRACTOR MARK-UP (OH&P)	\$ 4,361,145	\$ 2,567,950	\$ 1,722,160	\$ 8,651,254
SUBTOTAL:	\$ 32,419,728	\$ 19,132,338	\$ 12,821,713	\$ 64,373,779
CONTINGENCY ON ENTIRE PROJECT	\$ 6,483,946	\$ 3,826,468	\$ 2,564,343	\$ 12,874,756
TOTAL:	\$ 38,903,673	\$ 22,958,805	\$ 15,386,056	\$ 77,248,534

Description of Work: Construct a new Barrett 138kV GIS substation adjacent to the existing Barrett 138kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 23,760	\$ 15,840	\$ 39,600
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,115	SY	4.85	7.20	4.80	\$ 10,257	\$ 15,227	\$ 10,151	\$ 35,636
1.4	Strip and Dispose Top Soil	3,549	CY		24.50	10.50	\$ -	\$ 86,959	\$ 37,268	\$ 124,227
1.5	Site Grading- Excavation for Substation Pad	10,648	CY		9.00	6.00	\$ -	\$ 95,832	\$ 63,888	\$ 159,720
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	5,750	CY		21.00	9.00	\$ -	\$ 120,748.32	\$ 51,749.28	\$ 172,497.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	8,625	CY		2.40	1.60	\$ -	\$ 20,700	\$ 13,800	\$ 34,500
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	5,750	CY	25.00	2.40	1.60	\$ 143,748	\$ 13,800	\$ 9,200	\$ 166,748
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	10,648	SY	11.00	6.00	4.00	\$ 117,128	\$ 63,888	\$ 42,592	\$ 223,608
1.11	Site Surfacing - Aggregate 6" Thick	10,648	SY	16.50	4.50	3.00	\$ 175,692	\$ 47,916	\$ 31,944	\$ 255,552
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,056	LF	13.85	13.85	6.92	\$ 14,623	\$ 14,623	\$ 7,312	\$ 36,559
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	8,896	SF	1.50	1.50	1.00	\$ 13,344	\$ 13,344	\$ 8,896	\$ 35,584
1.17	Erosion Control-Silt fence install & remove	1,620	LF	2.41	3.16	0.72	\$ 3,904	\$ 5,119	\$ 1,166	\$ 10,190
1.18	Temporary fencing	1,080	LF	7.50	5.25	2.25	\$ 8,100	\$ 5,670	\$ 2,430	\$ 16,200

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL. Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kv	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

NEXTera Energy- TO42 Core 7

5.Dunwoodie 345 kV GIS Substation

Total: \$ 64,677,743

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
5.Dunwoodie 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS	\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPTMENT	\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID	\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE	\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 11,599,927	\$ 9,176,864	\$ 6,637,039	\$ 27,413,830
SUBTOTAL (Costs):	\$ 21,764,927	\$ 15,275,864	\$ 10,703,039	\$ 47,743,830
CONTRACTOR MARK-UP (OH&P)	\$ 2,697,887	\$ 2,017,775	\$ 1,438,627	\$ 6,154,289
SUBTOTAL:	\$ 24,462,814	\$ 17,293,639	\$ 12,141,665	\$ 53,898,119
CONTINGENCY ON ENTIRE PROJECT	\$ 4,892,563	\$ 3,458,728	\$ 2,428,333	\$ 10,779,624
TOTAL:	\$ 29,355,377	\$ 20,752,367	\$ 14,569,999	\$ 64,677,743

Description of Work: Construct a new Dunwoodie 345kV GIS substation. Loop in the Pleasantville (2) and Sprain Brook lines and connect back to the existing Dunwoodie 345kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5.Dunwoodie 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 17,137	\$ 11,425	\$ 28,562
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,263	SY	4.85	7.20	4.80	\$ 6,124	\$ 9,092	\$ 6,061	\$ 21,278
1.4	Strip and Dispose Top Soil	2,560	CY		24.50	10.50	\$ -	\$ 62,720	\$ 26,880	\$ 89,600
1.5	Site Grading- Excavation for Substation Pad	7,680	CY		9.00	6.00	\$ -	\$ 69,120	\$ 46,080	\$ 115,200
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	4,147	CY		21.00	9.00	\$ -	\$ 87,091.20	\$ 37,324.80	\$ 124,416.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	6,221	CY		2.40	1.60	\$ -	\$ 14,930	\$ 9,953	\$ 24,883
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,147	CY	25.00	2.40	1.60	\$ 103,680	\$ 9,953	\$ 6,636	\$ 120,269
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	7,680	SY	11.00	6.00	4.00	\$ 84,480	\$ 46,080	\$ 30,720	\$ 161,280
1.11	Site Surfacing - Aggregate 6" Thick	7,680	SY	16.50	4.50	3.00	\$ 126,720	\$ 34,560	\$ 23,040	\$ 184,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	864	LF	13.85	13.85	6.92	\$ 11,965	\$ 11,965	\$ 5,982	\$ 29,912
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	325,073.45	83,781.82	55,348.36	\$ 325,073	\$ 83,782	\$ 55,348	\$ 464,204
1.16	Seeding	7,296	SF	1.50	1.50	1.00	\$ 10,944	\$ 10,944	\$ 7,296	\$ 29,184
1.17	Erosion Control-Silt fence install & remove	2,100	LF	2.41	3.16	0.72	\$ 5,061	\$ 6,636	\$ 1,512	\$ 13,209

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.18	Temporary fencing	1,400	LF	7.50	5.25	2.25	\$ 10,500	\$ 7,350	\$ 3,150	\$ 21,000
1.19	Substation entrance with asphalt	486	SY	19.50	26.00	19.50	\$ 9,479	\$ 12,639	\$ 9,479	\$ 31,597
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
4.28	Transport & Testing- GIL	0	LS		-	-				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
5.Dunwoodie 345 kV GIS Substation							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931
9.4	Utility PM and Project Oversight	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733
	Engineering									
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565

NEXTera Energy- TO42 Core 7

6.Elwood 138 kV Substation Upgrades

Total: \$ 7,946,839

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPTMENT	\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563
SUBTOTAL (Costs):	\$ 3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$ 692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$ 4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$ 908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$ 5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVAr reactor (1 block) at the exisitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVAr)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

NEXTera Energy- TO42 Core 7

7.Jamaica 138 kV Substation Upgrades

Total: \$ 2,024,724

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
7.Jamaica 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES	\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPTMENT	\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752
SUBTOTAL (Costs):	\$ 658,333	\$ 579,029	\$ 192,528	\$ 1,429,890
CONTRACTOR MARK-UP (OH&P)	\$ 118,500	\$ 104,225	\$ 34,655	\$ 257,380
SUBTOTAL:	\$ 776,832	\$ 683,255	\$ 227,183	\$ 1,687,270
CONTINGENCY ON ENTIRE PROJECT	\$ 155,366	\$ 136,651	\$ 45,437	\$ 337,454
TOTAL:	\$ 932,199	\$ 819,906	\$ 272,620	\$ 2,024,724

Description of Work: Add an additional terminal at the existing Jamaica 138kV substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345/138kV Gas-Insulated Bus Conductor	246	LF	550.00	275.00	82.50	\$ 135,300	\$ 67,650	\$ 20,295	\$ 223,245
4.30	345/138kV Gas-Insulated Bus Conductor-elbow	6	EA	2,500.00	1,250.00	375.00	\$ 15,000	\$ 7,500	\$ 2,250	\$ 24,750
4.31	Transport & Testing- GIL	1	LS		27,054.00	18,036.00	\$ -	\$ 27,054	\$ 18,036	\$ 45,090
TOTAL - MAJOR EQUIPMENT							\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL- CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
7.Jamaica 138 kV Substation Upgrades							\$ 595,020	\$ 355,092	\$ 145,026	\$ 1,095,138
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,504.13	7,501.77	\$ -	\$ 17,504	\$ 7,502	\$ 25,006
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,805.51		\$ -	\$ 43,806	\$ -	\$ 43,806
9.4	Utility PM and Project Oversight	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.5	Site Accommodation, Facilities, Storage	1	LS	10,951.38			\$ 10,951	\$ -	\$ -	\$ 10,951
	Engineering									
9.6	Design Engineering	1.00	LS		87,611.01		\$ -	\$ 87,611	\$ -	\$ 87,611
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,665.96		\$ -	\$ 7,666	\$ -	\$ 7,666
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		41,067.66		\$ -	\$ 41,068	\$ -	\$ 41,068
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		10,951.38		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,285.41		\$ -	\$ 3,285	\$ -	\$ 3,285
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	595,019.53			\$ 52,362	\$ -	\$ -	\$ 52,362
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,095.14		\$ -	\$ 1,095	\$ -	\$ 1,095
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752

NEXTera Energy- TO42 Core 7

8.Newbridge 345/138 kV GIS Substation Upgrades

Total: \$ 89,858,233

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPTMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138kV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION	#REF!									
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138kV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
	Engineering									
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

NEXTera Energy- TO42 Core 7

9.Rainey 345kV GIS Substation Upgrades

Total: \$ 45,946,157

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
9.Rainey 345kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID	\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE	\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 8,610,766	\$ 8,924,115	\$ 5,696,359	\$ 23,231,241
SUBTOTAL (Costs):	\$ 13,740,766	\$ 12,002,115	\$ 7,748,359	\$ 33,491,241
CONTRACTOR MARK-UP (OH&P)	\$ 1,857,738	\$ 1,791,021	\$ 1,148,465	\$ 4,797,223
SUBTOTAL:	\$ 15,598,504	\$ 13,793,136	\$ 8,896,824	\$ 38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$ 3,119,701	\$ 2,758,627	\$ 1,779,365	\$ 7,657,693
TOTAL:	\$ 18,718,205	\$ 16,551,763	\$ 10,676,189	\$ 45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.Rainey 345kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,856	\$ 5,904	\$ 14,760
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	989	SY	4.85	7.20	4.80	\$ 4,796	\$ 7,120	\$ 4,747	\$ 16,663
1.4	Strip and Dispose Top Soil	1,323	CY		24.50	10.50	\$ -	\$ 32,412	\$ 13,891	\$ 46,303
1.5	Site Grading- Excavation for Substation Pad	3,969	CY		9.00	6.00	\$ -	\$ 35,719	\$ 23,813	\$ 59,532
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,143	CY		21.00	9.00	\$ -	\$ 45,006.19	\$ 19,288.37	\$ 64,294.56
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,215	CY		2.40	1.60	\$ -	\$ 7,715	\$ 5,144	\$ 12,859
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,143	CY	25.00	2.40	1.60	\$ 53,579	\$ 5,144	\$ 3,429	\$ 62,151
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,969	SY	11.00	6.00	4.00	\$ 43,657	\$ 23,813	\$ 15,875	\$ 83,345
1.11	Site Surfacing - Aggregate 6" Thick	3,969	SY	16.50	4.50	3.00	\$ 65,485	\$ 17,860	\$ 11,906	\$ 95,251
1.12	7' Station Fence w/ Barbed Wire & Grounding	726	LF	13.85	13.85	6.92	\$ 10,054	\$ 10,054	\$ 5,027	\$ 25,134
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	109,761.60	38,400.00	25,368.00	\$ 109,762	\$ 38,400	\$ 25,368	\$ 173,530
1.16	Seeding	3,000	SF	1.50	1.50	1.00	\$ 4,500	\$ 4,500	\$ 3,000	\$ 12,000
1.17	Erosion Control-Silt fence install & remove	1,200	LF	2.41	3.16	0.72	\$ 2,892	\$ 3,792	\$ 864	\$ 7,548
1.18	Temporary fencing	800	LF	7.50	5.25	2.25	\$ 6,000	\$ 4,200	\$ 1,800	\$ 12,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
	Engineering									
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

NEXtera Energy- TO42 Core 7

10.Shore Road 138kV Substation Upgrades

Total: \$ 13,943,860

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
10.Shore Road 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS	\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES	\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT	\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936
SUBTOTAL (Costs):	\$ 6,942,247	\$ 2,219,499	\$ 685,612	\$ 9,847,359
CONTRACTOR MARK-UP (OH&P)	\$ 1,249,604	\$ 399,510	\$ 123,410	\$ 1,772,525
SUBTOTAL:	\$ 8,191,851	\$ 2,619,009	\$ 809,023	\$ 11,619,883
CONTINGENCY ON ENTIRE PROJECT	\$ 1,638,370	\$ 523,802	\$ 161,805	\$ 2,323,977
TOTAL:	\$ 9,830,222	\$ 3,142,811	\$ 970,827	\$ 13,943,860

Description of Work: Add a new 250 MVAr reactor at the existing Shore Road 138kV station (5 block of 50 MVAr)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 540	\$ 360	\$ 900
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	81	CY		24.50	10.50	\$ -	\$ 1,976	\$ 847	\$ 2,823
1.5	Site Grading- Excavation for Substation Pad	242	CY		9.00	6.00	\$ -	\$ 2,178	\$ 1,452	\$ 3,630
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	131	CY		21.00	9.00	\$ -	\$ 2,744.28	\$ 1,176.12	\$ 3,920.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	196	CY		2.40	1.60	\$ -	\$ 470	\$ 314	\$ 784
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	131	CY	25.00	2.40	1.60	\$ 3,267	\$ 314	\$ 209	\$ 3,790
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	242	SY	11.00	6.00	4.00	\$ 2,662	\$ 1,452	\$ 968	\$ 5,082
1.11	Site Surfacing - Aggregate 6" Thick	242	SY	16.50	4.50	3.00	\$ 3,993	\$ 1,089	\$ 726	\$ 5,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL. Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534
	Engineering									
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

NEXTera Energy- TO42 Core 7

11.Sprain Brook 345kV Substation Expansion

Total: \$ 588,691,401

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
11.Sprain Brook 345kV Substation Expansion				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS	\$ 1,720,348	\$ 1,937,613	\$ 1,212,320	\$ 4,870,281
3. SUBSTATION STRUCTURES	\$ 957,733	\$ 851,087	\$ 547,395	\$ 2,356,215
4. MAJOR EQUIPTMENT	\$ 7,726,354	\$ 1,538,963	\$ 874,787	\$ 10,140,104
5. LOW VOLTAGE & CONTROL CABLE	\$ 244,745	\$ 66,182	\$ 13,236	\$ 324,162
6. CONDUIT & CABLE TRENCH	\$ 631,324	\$ 197,728	\$ 72,112	\$ 901,164
7. GROUND GRID	\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE	\$ 1,297,167	\$ 1,032,988	\$ 375,678	\$ 2,705,833
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,931,946	\$ 72,783,131	\$ 17,990,666	\$ 97,705,743
SUBTOTAL (Costs):	\$ 49,563,519	\$ 203,007,764	\$ 163,171,232	\$ 415,742,515
CONTRACTOR MARK-UP (OH&P)	\$ 8,921,433	\$ 36,541,397	\$ 29,370,822	\$ 74,833,653
SUBTOTAL:	\$ 58,484,953	\$ 239,549,161	\$ 192,542,053	\$ 490,576,167
CONTINGENCY ON ENTIRE PROJECT	\$ 11,696,991	\$ 47,909,832	\$ 38,508,411	\$ 98,115,233
TOTAL:	\$ 70,181,943	\$ 287,458,993	\$ 231,050,464	\$ 588,691,401

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11.Sprain Brook 345kV Substation Expansion										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.4	ACRE	-	42,000.00	28,000.00	\$ -	\$ 224,902	\$ 149,935	\$ 374,837
1.2	Demolition	1	LS	-	120,000.00	80,000.00	\$ -	\$ 120,000	\$ 80,000	\$ 200,000
1.3	New Access Road - 20'	3,631	SY	4.85	7.20	4.80	\$ 17,611	\$ 26,144	\$ 17,429	\$ 61,184
1.4	Strip and Dispose Top Soil	8,639	CY		24.50	10.50	\$ -	\$ 211,658	\$ 90,711	\$ 302,369
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	56,901	CY		9.00	6.00	\$ -	\$ 512,110	\$ 341,407	\$ 853,517
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	227,604	CY		120.00	180.00	\$ -	\$ 27,312,533	\$ 40,968,800	\$ 68,281,333
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	384,083	CY		21.00	9.00	\$ -	\$ 8,065,732.50	\$ 3,456,742.50	\$ 11,522,475
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	11,380	SY	11.00	6.00	4.00	\$ 125,182	\$ 68,281	\$ 45,521	\$ 238,985
1.12	Site Surfacing - Aggregate 6" Thick	11,380	SY	16.50	4.50	3.00	\$ 187,774	\$ 51,211	\$ 34,141	\$ 273,125
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,300	LF	13.85	13.85	6.92	\$ 18,002	\$ 18,002	\$ 9,001	\$ 45,006
1.14	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.15	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	219,523.20	76,800.00	50,736.00	\$ 219,523	\$ 76,800	\$ 50,736	\$ 347,059
1.17	Seeding	130,834	SF	1.50	1.50	1.00	\$ 196,251	\$ 196,251	\$ 130,834	\$ 523,336
1.18	Erosion Control-Silt fence install & remove	3,900	LF	2.41	3.16	0.72	\$ 9,399	\$ 12,324	\$ 2,808	\$ 24,531
1.19	Temporary fencing	1,430	LF	7.50	5.25	2.25	\$ 10,725	\$ 7,508	\$ 3,218	\$ 21,450
1.20	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.22	Concrete Retaining Wall- Soil excavation	99,073	CY		9.00	6.00	\$ -	\$ 891,661	\$ 594,440	\$ 1,486,101
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727
1.26	Concrete Retaining Walll- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	350	CY	703.89	804.44	502.78	\$ 246,360	\$ 281,554	\$ 175,971	\$ 703,885
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	180	CY	703.89	804.44	502.78	\$ 126,699	\$ 144,799	\$ 90,500	\$ 361,998
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,720,348	\$ 1,937,613	\$ 1,212,320	\$ 4,870,281
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	-	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 957,733	\$ 851,087	\$ 547,395	\$ 2,356,215
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	16	EA	57,720.00	34,632.00	23,088.00	\$ 923,520	\$ 554,112	\$ 369,408	\$ 1,847,040
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,487.50	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		367,900.00	241,600.00	\$ -	\$ 367,900	\$ 241,600	\$ 609,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	641,250.00	384,750.00	256,500.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker	9	EA	350,000.00	57,239.00	24,531.00	\$ 3,150,000	\$ 515,151	\$ 220,779	\$ 3,885,930
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,194,419.50	716,651.70	477,767.80	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,726,354	\$ 1,538,963	\$ 874,787	\$ 10,140,104
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	46,200	LF	5.30	1.43	0.29	\$ 244,745	\$ 66,182	\$ 13,236	\$ 324,162
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 244,745	\$ 66,182	\$ 13,236	\$ 324,162
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,400	LF	11.15	10.80	5.40	\$ 93,660	\$ 90,720	\$ 45,360	\$ 229,740
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,018	LF	266.50	53.04	13.26	\$ 537,664	\$ 107,008	\$ 26,752	\$ 671,424
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00				\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00				\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28				\$ -
6.11	345kV UG- Conduit	466	LF	266.73	202.15	100.00				\$ -
6.12	345kV UG- Cable	1,398	LF	167.00	100.20	66.80				\$ -
6.13	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				\$ -
6.14	Fiber Optic Cable	466	LF	7.40	3.33	2.22				\$ -
6.15	Ground Continuity Conductor	466	LF	13.04	7.53	5.02				\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 631,324	\$ 197,728	\$ 72,112	\$ 901,164
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,277	LF	2.09	3.42	1.46	\$ 36,126	\$ 59,006	\$ 25,288	\$ 120,421

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.2	Caweld, DSA, 4/0 , T, CROSS	462	EA	165.00	75.00		\$ 76,230	\$ 34,650	\$ -	\$ 110,880
7.3	Ground Rod, 3/4" x 15'	410	EA	135.00	67.50	7.50	\$ 55,350	\$ 27,675	\$ 3,075	\$ 86,100
TOTAL - GROUND GRID							\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	542,947.99	380,063.60	162,884.40	\$ 542,948	\$ 380,064	\$ 162,884	\$ 1,085,896
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.10	Backup Bus Differential Relays: GE B90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,297,167	\$ 1,032,988	\$ 375,678	\$ 2,705,833
11.Sprain Brook 345kV Substation Expansion							\$ 42,631,573	\$ 130,224,633	\$ 145,180,566	\$ 318,036,771
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,639,181.94	4,131,077.97	\$ -	\$ 9,639,182	\$ 4,131,078	\$ 13,770,260
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,180,367.71		\$ -	\$ 3,180,368	\$ -	\$ 3,180,368
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		12,721,470.86		\$ -	\$ 12,721,471	\$ -	\$ 12,721,471
9.4	Utility PM and Project Oversight	1.00	LS		3,180,367.71		\$ -	\$ 3,180,368	\$ -	\$ 3,180,368
9.5	Site Accommodation, Facilities, Storage	1.00	LS	3,180,367.71			\$ 3,180,368	\$ -	\$ -	\$ 3,180,368
	Engineering									
9.6	Design Engineering	1.00	LS		25,442,941.71		\$ -	\$ 25,442,942	\$ -	\$ 25,442,942
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,226,257.40		\$ -	\$ 2,226,257	\$ -	\$ 2,226,257
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		11,926,378.93		\$ -	\$ 11,926,379	\$ -	\$ 11,926,379
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,180,367.71		\$ -	\$ 3,180,368	\$ -	\$ 3,180,368
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		954,110.31		\$ -	\$ 954,110	\$ -	\$ 954,110
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,029,600.00	\$ -	\$ -	\$ 2,029,600	\$ 2,029,600
9.17	Legal Fees (Real estate)	1.00	LS		-	60,888.00	\$ -	\$ -	\$ 60,888	\$ 60,888
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 11,760,000	\$ -	\$ -	\$ 11,760,000	\$ 11,760,000
9.20	Sales Tax on Materials	8.80%	LS	42,631,573.11			\$ 3,751,578	\$ -	\$ -	\$ 3,751,578
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		318,036.77		\$ -	\$ 318,037	\$ -	\$ 318,037
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,931,946	\$ 72,783,131	\$ 17,990,666	\$ 97,705,743

NEXTera Energy- TO42 Core 7

12 - Station 36a Sprain Brook HVDC 1200MW Converter Station

Total: \$ 454,943,796

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,265,365	\$ 6,143,166	\$ 7,447,195	\$ 15,855,727
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ 238,706	\$ 172,356	\$ 40,224	\$ 451,286
8. CONTROL ENCLOSURE	\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,232,085	\$ 4,074,870	\$ 15,022,185	\$ 35,329,140
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 18,816,313	\$ 10,454,517	\$ 22,525,636	\$ 51,796,466
SUBTOTAL (Costs):	\$ 198,816,313	\$ 70,454,517	\$ 82,525,636	\$ 351,796,466
CONTRACTOR MARK-UP (OH&P)	\$ 14,186,936	\$ 5,481,813	\$ 7,654,615	\$ 27,323,364
SUBTOTAL:	\$ 213,003,249	\$ 75,936,330	\$ 90,180,251	\$ 379,119,830
CONTINGENCY ON ENTIRE PROJECT	\$ 42,600,650	\$ 15,187,266	\$ 18,036,050	\$ 75,823,966
TOTAL:	\$ 255,603,899	\$ 91,123,596	\$ 108,216,301	\$ 454,943,796

Description of Work: Construct a new Sprain Brook 1200MW converter station, with a transition from 320kV DC to 345kV AC and tie into the expanded Sprain Brook 345kV GIS station and the Northport-Sprain Brook HVDC cable.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 105,000	\$ 70,000	\$ 175,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,002	SY	4.85	7.20	4.80	\$ 4,861	\$ 7,216	\$ 4,811	\$ 16,887
1.4	Strip and Dispose Top Soil	8,067	CY		24.50	10.50	\$ -	\$ 197,633	\$ 84,700	\$ 282,333
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	4,033	CY		9.00	6.00	\$ -	\$ 36,300	\$ 24,200	\$ 60,500
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	36,300	CY		120.00	180.00	\$ -	\$ 4,356,000.00	\$ 6,534,000.00	\$ 10,890,000
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	43,560	CY		21.00	9.00	\$ -	\$ 914,760.00	\$ 392,040.00	\$ 1,306,800
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,089	CY		2.40	1.60	\$ -	\$ 2,614	\$ 1,742	\$ 4,356
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	43,560	CY	25.00	2.40	1.60	\$ 1,089,000	\$ 104,544	\$ 69,696	\$ 1,263,240
1.10	Install substation 8" pad base	12,100	SY	11.00	6.00	4.00	\$ 133,100	\$ 72,600	\$ 48,400	\$ 254,100
1.11	Site Surfacing - Aggregate 6" Thick	18,150	SY	16.50	4.50	3.00	\$ 299,475	\$ 81,675	\$ 54,450	\$ 435,600
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,872	LF	13.85	13.85	6.92	\$ 25,923	\$ 25,923	\$ 12,962	\$ 64,809
1.13	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.16	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.17	Erosion Control-Silt fence install & remove	3,089	LF	2.41	3.16	0.72	\$ 7,444	\$ 9,761	\$ 2,224	\$ 19,429
1.18	Temporary fencing	2,059	LF	7.50	5.25	2.25	\$ 15,444	\$ 10,811	\$ 4,633	\$ 30,888
1.19	Substation entrance with asphalt	812	SY	19.50	26.00	19.50	\$ 15,832	\$ 21,109	\$ 15,832	\$ 52,773

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,265,365	\$ 6,143,166	\$ 7,447,195	\$ 15,855,727
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Builiding		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA	852,222.22	511,333.33	340,888.89	\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Conduit	1,001	LF	266.73	202.15	100.00				
6.9	345kV UG- Cable	3,153	LF	167.00	100.20	66.80				
6.10	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				
6.13	Fiber Optic Cable	1,051	LF	7.40	3.33	2.22				
6.14	Ground Continuity Conductor	1,051	LF	13.04	7.53	5.02				
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	24,417	LF	2.09	3.42	1.46	\$ 51,056	\$ 83,391	\$ 35,739	\$ 170,186
7.2	Caweld, DSA, 4/0 , T, CROSS	648	EA	165.00	75.00		\$ 106,920	\$ 48,600	\$ -	\$ 155,520
7.3	Ground Rod, 3/4" x 15'	598	EA	135.00	67.50	7.50	\$ 80,730	\$ 40,365	\$ 4,485	\$ 125,580
TOTAL - GROUND GRID							\$ 238,706	\$ 172,356	\$ 40,224	\$ 451,286
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station							\$ 182,584,228	\$ 66,379,647	\$ 67,503,451	\$ 316,467,326
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		485,908.43	208,246.47	\$ -	\$ 485,908	\$ 208,246	\$ 694,155
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		658,693.03		\$ -	\$ 658,693	\$ -	\$ 658,693
9.4	Utility PM and Project Oversight	1	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.5	Site Accommodation, Facilities, Storage	1	LS	164,673.26			\$ 164,673	\$ -	\$ -	\$ 164,673
	Engineering									
9.6	Design Engineering	1.00	LS		1,317,386.06		\$ -	\$ 1,317,386	\$ -	\$ 1,317,386
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		115,271.28		\$ -	\$ 115,271	\$ -	\$ 115,271
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		617,524.71		\$ -	\$ 617,525	\$ -	\$ 617,525
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		49,401.98		\$ -	\$ 49,402	\$ -	\$ 49,402
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,558,096.00	\$ -	\$ -	\$ 5,558,096	\$ 5,558,096
9.17	Legal Fees (Real estate)	1.00	LS		-	166,742.88	\$ -	\$ -	\$ 166,743	\$ 166,743
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 9,080,000	\$ -	\$ -	\$ 9,080,000	\$ 9,080,000
9.20	Sales Tax on Materials	8.80%	LS	182,584,227.65			\$ 16,067,412	\$ -	\$ -	\$ 16,067,412
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		316,467.33		\$ -	\$ 316,467	\$ -	\$ 316,467
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,232,085	\$ 4,074,870	\$ 15,022,185	\$ 35,329,140

NEXTera Energy- TO42 Core 7

13- Station 30a New Northport HVDC 1200MW Converter Station

Total: \$ 448,740,863

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
13- Station 30a New Northport HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,491,747	\$ 1,285,611	\$ 729,878	\$ 3,507,235
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 6,063,620	\$ 3,718,325	\$ 2,122,341	\$ 11,904,286
7. GROUND GRID	\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE	\$ 293,437	\$ 234,750	\$ 58,687	\$ 586,875
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,714,737	\$ 3,872,639	\$ 10,404,395	\$ 30,991,771
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 24,788,558	\$ 9,273,986	\$ 13,353,320	\$ 47,415,864
SUBTOTAL (Costs):	\$ 204,788,558	\$ 69,273,986	\$ 73,353,320	\$ 347,415,864
CONTRACTOR MARK-UP (OH&P)	\$ 15,261,940	\$ 5,269,317	\$ 6,003,598	\$ 26,534,855
SUBTOTAL:	\$ 220,050,498	\$ 74,543,303	\$ 79,356,918	\$ 373,950,719
CONTINGENCY ON ENTIRE PROJECT	\$ 44,010,100	\$ 14,908,661	\$ 15,871,384	\$ 74,790,144
TOTAL:	\$ 264,060,598	\$ 89,451,964	\$ 95,228,301	\$ 448,740,863

Description of Work: Construct a new Northport 1200MW converter station, with a transition from 320kV DC to 138kV AC and tie into the new Northport 138kV GIS with three 138kV lines.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13- Station 30a New Northport HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 105,000	\$ 70,000	\$ 175,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,200	SY	4.85	7.20	4.80	\$ 10,670	\$ 15,840	\$ 10,560	\$ 37,070
1.4	Strip and Dispose Top Soil	8,067	CY		24.50	10.50	\$ -	\$ 197,633	\$ 84,700	\$ 282,333
1.5	Site Grading- Excavation for Substation Pad	24,200	CY		9.00	6.00	\$ -	\$ 217,800	\$ 145,200	\$ 363,000
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	13,068	CY		21.00	9.00	\$ -	\$ 274,428.00	\$ 117,612.00	\$ 392,040.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	19,602	CY		2.40	1.60	\$ -	\$ 47,045	\$ 31,363	\$ 78,408
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	13,068	CY	25.00	2.40	1.60	\$ 326,700	\$ 31,363	\$ 20,909	\$ 378,972
1.9	Install substation 8" pad base	12,100	SY	11.00	6.00	4.00	\$ 133,100	\$ 72,600	\$ 48,400	\$ 254,100
1.10	Site Surfacing - Aggregate 6" Thick	18,150	SY	16.50	4.50	3.00	\$ 299,475	\$ 81,675	\$ 54,450	\$ 435,600
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,922	LF	13.85	13.85	6.92	\$ 26,616	\$ 26,616	\$ 13,308	\$ 66,540
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.15	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.16	Erosion Control-Silt fence install & remove	3,171	LF	2.41	3.16	0.72	\$ 7,643	\$ 10,021	\$ 2,283	\$ 19,947
1.17	Temporary fencing	2,114	LF	7.50	5.25	2.25	\$ 15,857	\$ 11,100	\$ 4,757	\$ 31,713
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,491,747	\$ 1,285,611	\$ 729,878	\$ 3,507,235
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Buiilding	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	7,020	LF	266.73	202.15	100.00	\$ 1,872,451	\$ 1,419,068	\$ 702,034	\$ 3,993,554
6.9	138kV UG- Cable	22,113	LF	145.00	87.00	58.00	\$ 3,206,385	\$ 1,923,831	\$ 1,282,554	\$ 6,412,770
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	7,371	LF	7.40	3.33	2.22	\$ 54,523	\$ 24,550	\$ 16,367	\$ 95,440
6.14	Ground Continuity Conductor	7,371	LF	13.04	7.53	5.02	\$ 96,110	\$ 55,482	\$ 36,988	\$ 188,580
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,063,620	\$ 3,718,325	\$ 2,122,341	\$ 11,904,286
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	23,100	LF	2.09	3.42	1.46	\$ 48,302	\$ 78,893	\$ 33,811	\$ 161,007

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.2	Caweld, DSA, 4/0 , T, CROSS	612	EA	165.00	75.00		\$ 100,980	\$ 45,900	\$ -	\$ 146,880
7.3	Ground Rod, 3/4" x 15'	561	EA	135.00	67.50	7.50	\$ 75,735	\$ 37,868	\$ 4,208	\$ 117,810
TOTAL - GROUND GRID							\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.8	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 293,437	\$ 234,750	\$ 58,687	\$ 586,875
13- Station 30a New Northport HVDC 1200MW Converter Station							\$ 188,073,821	\$ 65,401,347	\$ 62,948,925	\$ 316,424,093
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		292,259.53	125,254.08	\$ -	\$ 292,260	\$ 125,254	\$ 417,514
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		656,963.72		\$ -	\$ 656,964	\$ -	\$ 656,964
9.4	Utility PM and Project Oversight	1	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.5	Site Accommodation, Facilities, Storage	1	LS	164,240.93			\$ 164,241	\$ -	\$ -	\$ 164,241
	Engineering									
9.6	Design Engineering	1.00	LS		1,313,927.44		\$ -	\$ 1,313,927	\$ -	\$ 1,313,927
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		114,968.65		\$ -	\$ 114,969	\$ -	\$ 114,969
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		615,903.49		\$ -	\$ 615,903	\$ -	\$ 615,903
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		49,272.28		\$ -	\$ 49,272	\$ -	\$ 49,272
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,271,884.00	\$ -	\$ -	\$ 1,271,884	\$ 1,271,884
9.17	Legal Fees (Real estate)	1.00	LS		-	38,156.52	\$ -	\$ -	\$ 38,157	\$ 38,157
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 8,960,000	\$ -	\$ -	\$ 8,960,000	\$ 8,960,000
9.20	Sales Tax on Materials	8.80%	LS	188,073,820.71			\$ 16,550,496	\$ -	\$ -	\$ 16,550,496
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		316,424.09		\$ -	\$ 316,424	\$ -	\$ 316,424
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,714,737	\$ 3,872,639	\$ 10,404,395	\$ 30,991,771

<u>NEXtera Energy- TO42 Core 7</u>		
<u>14 - Northport 138kV GIS Substation</u>		
Total:	\$	40,126,906

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NEXtera Energy- TO42 Core 7

14 - Northport 138kV GIS Substation

Total: \$ 40,126,906

<i>NEXtera Energy- TO42 Core 7</i>				
	<i>Material Supply</i>	<i>Labor Supply</i>	<i>Equip Supply</i>	<i>Total</i>
14 - Northport 138kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 423,784	\$ 299,491	\$ 171,133	\$ 894,409
2. SUBSTATION FOUNDATIONS	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 2,658,505	\$ 1,489,519	\$ 795,356	\$ 4,943,380
7. GROUND GRID	\$ 31,301	\$ 22,409	\$ 5,136	\$ 58,846
8. CONTROL ENCLOSURE	\$ 1,925,705	\$ 1,502,309	\$ 534,896	\$ 3,962,909
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,212,779	\$ 2,378,384	\$ 1,029,353	\$ 4,620,516
Turnkey cost (HVDC, GIS)	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
Non-Turnkey cost	\$ 6,596,977	\$ 6,086,288	\$ 2,782,234	\$ 15,465,499
SUBTOTAL (Costs):	\$ 13,761,977	\$ 10,385,288	\$ 5,648,234	\$ 29,795,499
CONTRACTOR MARK-UP (OH&P)	\$ 1,617,356	\$ 1,353,472	\$ 672,762	\$ 3,643,590
SUBTOTAL:	\$ 15,379,333	\$ 11,738,760	\$ 6,320,996	\$ 33,439,088
CONTINGENCY ON ENTIRE PROJECT	\$ 3,075,867	\$ 2,347,752	\$ 1,264,199	\$ 6,687,818
TOTAL:	\$ 18,455,200	\$ 14,086,511	\$ 7,585,195	\$ 40,126,906

<p>Description of Work: Construct a new Northport 138kV GIS substation adjacent to the existing Northport 138kV substation. Tie the existing Pilgrim-Northport 138kV lines, the new 138kV lines to Northport HVDC station, and the existing Northport 138kV substation into the 138kV breaker-and-a-half bus configuration.</p>
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[illegible]

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 423,784	\$ 299,491	\$ 171,133	\$ 894,409
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, GIS Enclosure-BLDG	490	CY	703.89	804.44	502.78	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
2.25	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138Kv, GIS indoor	15	EA	477,666.67	286,600.00	191,066.67	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
4.19	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	2,449	LF	266.73	202.15	100.00	\$ 653,224	\$ 495,057	\$ 244,912	\$ 1,393,193
6.9	138kV UG- Cable	7,714	LF	145.00	87.00	58.00	\$ 1,118,581	\$ 671,148	\$ 447,432	\$ 2,237,162
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	2,571	LF	7.40	3.33	2.22	\$ 19,021	\$ 8,564	\$ 5,710	\$ 33,295
6.14	Ground Continuity Conductor	2,571	LF	13.04	7.53	5.02	\$ 33,529	\$ 19,355	\$ 12,904	\$ 65,788
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,658,505	\$ 1,489,519	\$ 795,356	\$ 4,943,380
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,140	LF	2.09	3.42	1.46	\$ 6,566	\$ 10,724	\$ 4,596	\$ 21,886
7.2	Caweld, DSA, 4/0 , T, CROSS	91	EA	165.00	75.00		\$ 15,015	\$ 6,825	\$ -	\$ 21,840
7.3	Ground Rod, 3/4" x 15'	72	EA	135.00	67.50	7.50	\$ 9,720	\$ 4,860	\$ 540	\$ 15,120
TOTAL - GROUND GRID							\$ 31,301	\$ 22,409	\$ 5,136	\$ 58,846
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	1	EA	878,048.71	614,634.10	263,414.61	\$ 878,049	\$ 614,634	\$ 263,415	\$ 1,756,097
8.3	Primary Line Relays (87L): SEL-411L	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.4	Backup Line Relays (87L): GE L90	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							\$ 1,925,705	\$ 1,502,309	\$ 534,896	\$ 3,962,909
14 - Northport 138kV GIS Substation							\$ 12,549,198	\$ 8,006,904	\$ 4,618,880	\$ 25,174,983
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		191,127.46	81,911.77	\$ -	\$ 191,127	\$ 81,912	\$ 273,039
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		433,799.31		\$ -	\$ 433,799	\$ -	\$ 433,799
9.4	Utility PM and Project Oversight	1	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.5	Site Accommodation, Facilities, Storage	1	LS	108,449.83			\$ 108,450	\$ -	\$ -	\$ 108,450
	Engineering									
9.6	Design Engineering	1.00	LS		867,598.62		\$ -	\$ 867,599	\$ -	\$ 867,599
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		75,914.88		\$ -	\$ 75,915	\$ -	\$ 75,915
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		406,686.85		\$ -	\$ 406,687	\$ -	\$ 406,687
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		32,534.95		\$ -	\$ 32,535	\$ -	\$ 32,535
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	134,312.00	\$ -	\$ -	\$ 134,312	\$ 134,312
9.17	Legal Fees (Real estate)	1.00	LS		-	4,029.36	\$ -	\$ -	\$ 4,029	\$ 4,029
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 800,000	\$ -	\$ -	\$ 800,000	\$ 800,000
9.20	Sales Tax on Materials	8.80%	LS	12,549,198.06			\$ 1,104,329	\$ -	\$ -	\$ 1,104,329
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,174.98		\$ -	\$ 25,175	\$ -	\$ 25,175
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,212,779	\$ 2,378,384	\$ 1,029,353	\$ 4,620,516

NEXtera Energy- TO42 Core 7

15.Pilgrim 138kV Substation Upgrades

Total: \$ 2,036,018

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
15.Pilgrim 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
2. SUBSTATION FOUNDATIONS	\$ 34,758	\$ 39,723	\$ 24,827	\$ 99,308
3. SUBSTATION STRUCTURES	\$ 45,630	\$ 59,338	\$ 37,176	\$ 142,144
4. MAJOR EQUIPTMENT	\$ 234,399	\$ 58,019	\$ 25,896	\$ 318,314
5. LOW VOLTAGE & CONTROL CABLE	\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
6. CONDUIT & CABLE TRENCH	\$ 76,660	\$ 22,980	\$ 8,175	\$ 107,815
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 63,002	\$ 233,261	\$ 51,117	\$ 347,380
SUBTOTAL (Costs):	\$ 655,016	\$ 583,463	\$ 199,387	\$ 1,437,866
CONTRACTOR MARK-UP (OH&P)	\$ 117,903	\$ 105,023	\$ 35,890	\$ 258,816
SUBTOTAL:	\$ 772,919	\$ 688,486	\$ 235,277	\$ 1,696,682
CONTINGENCY ON ENTIRE PROJECT	\$ 154,584	\$ 137,697	\$ 47,055	\$ 339,336
TOTAL:	\$ 927,503	\$ 826,183	\$ 282,333	\$ 2,036,018

Description of Work: Add 1 terminal to Pilgrim 138kV substation to accommodate the new transmission line										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS		24,000.00	16,000.00	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting	0	EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 24,000	\$ 16,000	\$ 40,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	6	CY	703.89	804.44	502.78	\$ 4,266	\$ 4,875	\$ 3,047	\$ 12,187
2.28	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 34,758	\$ 39,723	\$ 24,827	\$ 99,308
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.18	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	150	LF	25.00	184.94	123.29	\$ 3,750	\$ 27,741	\$ 18,494	\$ 49,985
3.22	AL. Bus fittings	1	LS	4,500.00	4,500.00	2,250.00	\$ 4,500	\$ 4,500	\$ 2,250	\$ 11,250
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,630	\$ 59,338	\$ 37,176	\$ 142,144
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA				\$ -	\$ -	\$ -	\$ -
4.6	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 234,399	\$ 58,019	\$ 25,896	\$ 318,314
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	5,100	LF	5.30	1.43	0.29	\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 27,017	\$ 7,306	\$ 1,461	\$ 35,784
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	900	LF	11.15	10.80	5.40	\$ 10,035	\$ 9,720	\$ 4,860	\$ 24,615
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 76,660	\$ 22,980	\$ 8,175	\$ 107,815
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
10.Shore Road 138kV Substation Upgrades							\$ 592,014	\$ 350,201	\$ 148,270	\$ 1,090,486
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,446.51	7,477.08	\$ -	\$ 17,447	\$ 7,477	\$ 24,924
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,619.43		\$ -	\$ 43,619	\$ -	\$ 43,619
9.4	Utility PM and Project Oversight	1	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.5	Site Accommodation, Facilities, Storage	1	LS	10,904.86			\$ 10,905	\$ -	\$ -	\$ 10,905
	Engineering									
9.6	Design Engineering	1.00	LS		87,238.86		\$ -	\$ 87,239	\$ -	\$ 87,239
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		7,633.40		\$ -	\$ 1,527	\$ -	\$ 1,527
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,893.21		\$ -	\$ 40,893	\$ -	\$ 40,893
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,904.86		\$ -	\$ 10,905	\$ -	\$ 10,905
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,271.46		\$ -	\$ 3,271	\$ -	\$ 3,271
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	592,014.04			\$ 52,097	\$ -	\$ -	\$ 52,097
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,090.49		\$ -	\$ 1,090	\$ -	\$ 1,090
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,002	\$ 233,261	\$ 51,117	\$ 347,380

NEXtera Energy- TO42 Core 7

16. - Comp 101 Buchanan 345kV & HVDC Substation Upgrade

Total: \$ 959,659,189

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
16. - Comp 101 Buchanan 345kV & HVDC Substation Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,925,665	\$ 1,689,227	\$ 962,332	\$ 4,577,224
2. SUBSTATION FOUNDATIONS	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 338,395,000	\$ 203,037,000	\$ 135,358,000	\$ 676,790,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 375,000	\$ 225,000	\$ 150,000	\$ 750,000
7. GROUND GRID	\$ 436,905	\$ 316,163	\$ 74,073	\$ 827,142
8. CONTROL ENCLOSURE	\$ 3,467,091	\$ 2,681,279	\$ 1,034,812	\$ 7,183,182
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 30,551,686	\$ 4,101,391	\$ 19,478,239	\$ 54,131,316
Turnkey cost (HVDC, GIS)	\$ 338,395,000	\$ 203,037,000	\$ 135,358,000	\$ 676,790,000
Non-Turnkey cost	\$ 37,558,777	\$ 9,930,122	\$ 22,272,619	\$ 69,761,518
SUBTOTAL (Costs):	\$ 375,953,777	\$ 212,967,122	\$ 157,630,619	\$ 746,551,518
CONTRACTOR MARK-UP (OH&P)	\$ 27,064,280	\$ 13,969,642	\$ 12,130,551	\$ 53,164,473
SUBTOTAL:	\$ 403,018,057	\$ 226,936,764	\$ 169,761,170	\$ 799,715,991
CONTINGENCY ON ENTIRE PROJECT	\$ 80,603,611	\$ 45,387,353	\$ 33,952,234	\$ 159,943,198
TOTAL:	\$ 483,621,668	\$ 272,324,117	\$ 203,713,405	\$ 959,659,189

Description of Work: Construct two (2) new Buchanan HVDC 1200 MW converter stations, with a transition from 320 kV DC to 345 kV AC and ties into the existing Buchanan 345 kV station and the new NEET Offshore Wind Platform HVDC cables.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16. - Comp 101 Buchanan 345kV & HVDC Substation Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.5	ACRE	-	21,000.00	14,000.00	\$ -	\$ 136,500	\$ 91,000	\$ 227,500
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,733	SY	4.85	7.20	4.80	\$ 8,405	\$ 12,478	\$ 8,318	\$ 29,201
1.4	Strip and Dispose Top Soil	10,487	CY		24.50	10.50	\$ -	\$ 256,923	\$ 110,110	\$ 367,033
1.5	Site Grading- Excavation for Substation Pad	31,460	CY		9.00	6.00	\$ -	\$ 283,140	\$ 188,760	\$ 471,900
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	16,988	CY		21.00	9.00	\$ -	\$ 356,756.40	\$ 152,895.60	\$ 509,652.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	25,483	CY		2.40	1.60	\$ -	\$ 61,158	\$ 40,772	\$ 101,930
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	16,988	CY	25.00	2.40	1.60	\$ 424,710	\$ 40,772	\$ 27,181	\$ 492,664
1.9	Install substation 8" pad base	15,730	SY	11.00	6.00	4.00	\$ 173,030	\$ 94,380	\$ 62,920	\$ 330,330
1.10	Site Surfacing - Aggregate 6" Thick	23,595	SY	16.50	4.50	3.00	\$ 389,318	\$ 106,178	\$ 70,785	\$ 566,280
1.11	7' Station Fence w/ Barbed Wire & Grounding	2,662	LF	13.85	13.85	6.92	\$ 36,863	\$ 36,863	\$ 18,432	\$ 92,158
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	782,208.00	201,600.00	133,182.00	\$ 782,208	\$ 201,600	\$ 133,182	\$ 1,116,990
1.15	Seeding	22,080	SF	1.50	1.50	1.00	\$ 33,120	\$ 33,120	\$ 22,080	\$ 88,320
1.16	Erosion Control-Silt fence install & remove	4,392	LF	2.41	3.16	0.72	\$ 10,585	\$ 13,880	\$ 3,162	\$ 27,628
1.17	Temporary fencing	2,928	LF	7.50	5.25	2.25	\$ 21,962	\$ 15,373	\$ 6,588	\$ 43,923
1.18	Substation entrance with asphalt	1,111	SY	19.50	26.00	19.50	\$ 21,665	\$ 28,886	\$ 21,665	\$ 72,215
1.19	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,925,665	\$ 1,689,227	\$ 962,332	\$ 4,577,224
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Builiding		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	9	EA	849,444.44	509,666.67	339,777.78	\$ 7,645,000	\$ 4,587,000	\$ 3,058,000	\$ 15,290,000
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	2.0	EA	165,375,000.00	99,225,000.00	66,150,000.00	\$ 330,750,000.00	\$ 198,450,000.00	\$ 132,300,000.00	\$ 661,500,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 338,395,000	\$ 203,037,000	\$ 135,358,000	\$ 676,790,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV-OH	1,000	LF	375.00	225.00	150.00	\$ 375,000	\$ 225,000	\$ 150,000	\$ 750,000
6.8	345kV UG- Conduit		LF	266.73	202.15	100.00				
6.9	345kV UG- Cable		LF	167.00	100.20	66.80				
6.10	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28				
6.11	Fiber Optic Cable		LF	7.40	3.33	2.22				
6.12	Ground Continuity Conductor		LF	13.04	7.53	5.02				
TOTAL - CONDUIT & CABLE TRENCH							\$ 375,000	\$ 225,000	\$ 150,000	\$ 750,000
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	44,950	LF	2.09	3.42	1.46	\$ 93,990	\$ 153,518	\$ 65,793	\$ 313,302
7.2	Caweld, DSA, 4/0 , T, CROSS	1,175	EA	165.00	75.00		\$ 193,875	\$ 88,125	\$ -	\$ 282,000
7.3	Ground Rod, 3/4" x 15'	1,104	EA	135.00	67.50	7.50	\$ 149,040	\$ 74,520	\$ 8,280	\$ 231,840
TOTAL - GROUND GRID							\$ 436,905	\$ 316,163	\$ 74,073	\$ 827,142
8. CONTROL ENCLOSURE										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.6	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.7	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.8	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.13	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.15	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.16	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.17	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.18	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.19	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.20	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.22	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,467,091	\$ 2,681,279	\$ 1,034,812	\$ 7,183,182
16. - Comp 101 Buchanan 345kV & HVDC Substation Upgrade							\$ 345,402,091	\$ 208,865,731	\$ 138,152,380	\$ 692,420,202
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		301,808.89	129,346.67	\$ -	\$ 301,809	\$ 129,347	\$ 431,156
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		156,302.02		\$ -	\$ 156,302	\$ -	\$ 156,302
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		625,208.08		\$ -	\$ 625,208	\$ -	\$ 625,208
9.4	Utility PM and Project Oversight	1	LS		156,302.02		\$ -	\$ 156,302	\$ -	\$ 156,302
9.5	Site Accommodation, Facilities, Storage	1	LS	156,302.02			\$ 156,302	\$ -	\$ -	\$ 156,302
	Engineering									
9.6	Design Engineering	1.00	LS		1,250,416.16		\$ -	\$ 1,250,416	\$ -	\$ 1,250,416
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		109,411.41		\$ -	\$ 109,411	\$ -	\$ 109,411
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		586,132.57		\$ -	\$ 586,133	\$ -	\$ 586,133
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		156,302.02		\$ -	\$ 156,302	\$ -	\$ 156,302
9.13	Environmental-special studies/investigation	-	LS	-	-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,890.61		\$ -	\$ 46,891	\$ -	\$ 46,891
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			155,138.00	\$ -	\$ -	\$ 155,138	\$ 155,138
9.17	Legal Fees (Real estate)	1.00	LS		-	4,654.14	\$ -	\$ -	\$ 4,654	\$ 4,654
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 19,180,000	\$ -	\$ -	\$ 19,180,000	\$ 19,180,000
9.20	Sales Tax on Materials	8.80%	LS	345,402,090.76			\$ 30,395,384	\$ -	\$ -	\$ 30,395,384
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		692,420.20		\$ -	\$ 692,420	\$ -	\$ 692,420
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 30,551,686	\$ 4,101,391	\$ 19,478,239	\$ 54,131,316

NEXtera Energy- TO42 Core 7

17. Existing Ruland Road 138 kV Substation Upgrades

Total: \$ 2,030,035

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
17. Existing Ruland Road 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at existitng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
17. Existing Ruland Road 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus fittings		LS	22,500.00	22,500.00	11,250.00	\$ -	\$ -	\$ -	\$ -
3.21	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.2	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.4	345/138KV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.5	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Circuit Breaker	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.13	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.14	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kv	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.25	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.13	Fiber Optic Cable		LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.14	Ground Continuity Conductor		LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
6.11							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	0	EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.18	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.21	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
17. Existing Ruland Road 138 kV Substation Upgrades							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXTera Energy- TO42 Core 7

18. Existing East Garden City 138 kV Substation Upgrades

Total: \$ 28,298,464

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
18. Existing East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at existng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
18. Existing East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	25.00	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.20	AL. Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.21	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0.00	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		272,900.20	178,266.80	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator with oil containment	0	EA	25,764,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- PARs	0	EA		1,215,400.00	806,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kv	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.20	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.29	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
6.16										
6.17							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg		EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg		EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.22	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.23	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.24	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.25	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
18. Existing East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversight	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
	Engineering									
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
	Permitting and Additional Costs									
9.11	Physical Security		LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

		<u>NEXTera Energy- T042 Core 7</u>	
		<u>Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit</u>	
		<u>(EGC To Dunwoodie 345 kV)</u>	
		Total:	\$ 188,625,656

		<u>NEXTera Energy- T042 Core 7</u>	
		<u>Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit</u>	
		<u>(EGC To Dunwoodie 345 kV)</u>	
		Total:	\$ 188,625,656

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.	
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Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 7	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR /GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

<p align="center"> <u>NEXTera Energy- TO42 Core 7</u> <u>Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables - Single circuit</u> <u>(Ruland To Sprain Brook 345 kV)</u> </p>	
Total:	\$ 190,348,435

	Total:	\$ 190,348,435
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NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,428,213	\$ 13,991,584	\$ 9,068,290	\$ 37,488,087
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 26,563,688	\$ 16,084,460	\$ 10,362,874	\$ 53,011,023
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,896,317	\$ 16,766,065	\$ 5,757,273	\$ 27,419,655
SUBTOTAL (Costs):	\$ 47,984,667	\$ 57,128,499	\$ 29,313,695	\$ 134,426,861
CONTRACTOR MARK-UP (OH&P)	\$ 8,637,240	\$ 10,283,130	\$ 5,276,465	\$ 24,196,835
SUBTOTAL:	\$ 56,621,907	\$ 67,411,628	\$ 34,590,161	\$ 158,623,696
CONTINGENCY ON ENTIRE PROJECT	\$ 11,324,381	\$ 13,482,326	\$ 6,918,032	\$ 31,724,739
TOTAL:	\$ 67,946,288	\$ 80,893,954	\$ 41,508,193	\$ 190,348,435

Description of Work: Dunwoodie - New Rochelle Landing (single circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	350,573	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 701,146	\$ 525,859	\$ 175,286	\$ 1,402,291
2.3	Trench Excavation	17,529	CY		\$ 17.5	\$ 7.5	\$ -	\$ 306,751	\$ 131,465	\$ 438,216
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,826	SF	\$ 50	\$ 25	\$ 14	\$ 91,295	\$ 44,735	\$ 25,563	\$ 161,592
2.5	Supply & Install Thermal Backfill	15,338	CY	\$ 350	\$ 245	\$ 105	\$ 5,368,146	\$ 3,757,702	\$ 1,610,444	\$ 10,736,292
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,140	CY	\$ 200	\$ 125	\$ 50	\$ 1,428,097	\$ 892,561	\$ 357,024	\$ 2,677,682
2.9	Conduit 8" SCH 40PVC	178,886	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 5,116,151	\$ 1,014,286	\$ 434,694	\$ 6,565,131
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	89,443	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 314,840	\$ 281,746	\$ 120,748	\$ 717,334
2.12	Warning Tape	89,443	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,416	\$ 22,361	\$ 8,944	\$ 44,722
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	268,330	LF			\$ 0.25	\$ -	\$ -	\$ 67,082	\$ 67,082
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 238,996	\$ 238,996	\$ 119,498	\$ 597,490
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,742	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 106,126	\$ 111,432	\$ 47,756	\$ 265,314
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,562	\$ 85,686	\$ 114,248
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	71	EA		\$ 10	\$ 15	\$ -	\$ 714	\$ 1,071	\$ 1,785
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	153	EA		\$ 400	\$ 1,200	\$ -	\$ 61,350	\$ 184,051	\$ 245,401
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	25,510	CY		\$ 24.5	\$ 10.5	\$ -	\$ 624,994	\$ 267,854	\$ 892,848
2.27	Rock Excavation and Removal	13,680	CY		\$ 243	\$ 162	\$ -	\$ 3,324,344	\$ 2,216,229	\$ 5,540,573
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	20,521	CF		\$ 1.0	\$ 0.5	\$ -	\$ 20,521	\$ 10,260	\$ 30,781
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,428,213	\$ 13,991,584	\$ 9,068,290	\$ 37,488,087
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	46,958	FT	\$ 7	\$ 3	\$ 2	\$ 347,346	\$ 156,397	\$ 104,265	\$ 608,008
3.12	Ground Continuity Conductor	46,958	FT	\$ 13	\$ 8	\$ 5	\$ 612,281	\$ 353,450	\$ 235,634	\$ 1,201,365
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 26,563,688	\$ 16,084,460	\$ 10,362,874	\$ 53,011,023
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 43,088,349	\$ 40,362,433	\$ 23,556,423	\$ 107,007,205
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,917,566	\$ 1,278,377	\$ -	\$ 1,917,566	\$ 1,278,377	\$ 3,195,943
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,070,072.05		\$ -	\$ 1,070,072	\$ -	\$ 1,070,072
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,280,288.21		\$ -	\$ 4,280,288	\$ -	\$ 4,280,288
4.4	Utility PM and Project Oversight	1	LS		1,070,072.05		\$ -	\$ 1,070,072	\$ -	\$ 1,070,072
4.5	Site Accommodation, Facilities, Storage	1	LS	1,070,072.05			\$ 1,070,072	\$ -	\$ -	\$ 1,070,072
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,350,360	\$ -	\$ -	\$ 5,350,360	\$ -	\$ 5,350,360
4.7	LiDAR /GPR	1.0	LS		\$ 192,613	\$ 128,409	\$ -	\$ 192,613	\$ 128,409	\$ 321,022
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 449,430	\$ 299,620	\$ -	\$ 449,430	\$ 299,620	\$ 749,050
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,070,072		\$ -	\$ 1,070,072	\$ -	\$ 1,070,072
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 321,022		\$ -	\$ 321,022	\$ -	\$ 321,022
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 123,767	\$ -	\$ -	\$ 123,767	\$ 123,767
4.16	Legal Fees (Real estate)	1.00	LS		-	3,713.00	\$ -	\$ -	\$ 3,713	\$ 3,713
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,800,000	\$ -	\$ -	\$ 3,800,000	\$ 3,800,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 43,088,349.18			\$ 3,826,245	\$ -	\$ -	\$ 3,826,245
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 107,007	\$ -	\$ -	\$ 107,007	\$ 107,007
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,896,317	\$ 16,766,065	\$ 5,757,273	\$ 27,419,655

NEXtera Energy- TO42 Core 7

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit

(Northport To Sprain Brook 320 kV DC)

Total: \$ 159,124,018

NEXtera Energy- TO42 Core 7										
		Material Supply	Labor Supply	Equip Supply	Total					
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT		\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096					
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		\$ 13,444,148	\$ 13,874,209	\$ 9,004,614	\$ 36,322,970					
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION		\$ 18,612,600	\$ 10,891,459	\$ 7,013,404	\$ 36,517,464					
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 3,926,289	\$ 14,226,390	\$ 4,874,509	\$ 23,027,188					
SUBTOTAL (Costs):		\$ 38,079,485	\$ 49,278,448	\$ 25,017,786	\$ 112,375,719					
CONTRACTOR MARK-UP (OH&P)		\$ 6,854,307	\$ 8,870,121	\$ 4,503,202	\$ 20,227,629					
SUBTOTAL:		\$ 44,933,792	\$ 58,148,568	\$ 29,520,988	\$ 132,603,348					
CONTINGENCY ON ENTIRE PROJECT		\$ 8,986,758	\$ 11,629,714	\$ 5,904,198	\$ 26,520,670					
TOTAL:		\$ 53,920,551	\$ 69,778,282	\$ 35,425,185	\$ 159,124,018					

Description of Work: Dunwoodie - New Rochelle Landing (single circuit duct). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	352,013	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 704,026	\$ 528,019	\$ 176,006	\$ 1,408,051
2.3	Trench Excavation	17,601	CY		\$ 17.5	\$ 7.5	\$ -	\$ 308,011	\$ 132,005	\$ 440,016
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,833	SF	\$ 50	\$ 25	\$ 14	\$ 91,670	\$ 44,918	\$ 25,668	\$ 162,256
2.5	Supply & Install Thermal Backfill	15,401	CY	\$ 350	\$ 245	\$ 105	\$ 5,390,196	\$ 3,773,137	\$ 1,617,059	\$ 10,780,392
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,717	CY	\$ 200	\$ 125	\$ 50	\$ 1,543,478	\$ 964,674	\$ 385,870	\$ 2,894,022
2.9	Conduit 8" SCH 40PVC	134,165	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 3,837,113	\$ 760,714	\$ 326,020	\$ 4,923,848
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	134,165	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 472,260	\$ 422,619	\$ 181,122	\$ 1,076,002
2.12	Warning Tape	89,443	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,416	\$ 22,361	\$ 8,944	\$ 44,722
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,464	CY		\$ 17.5	\$ 7.5	\$ -	\$ 43,120	\$ 18,480	\$ 61,600
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	739	CY		\$ 14.0	\$ 6.0	\$ -	\$ 10,349	\$ 4,435	\$ 14,784
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	268,330	LF			\$ 0.25	\$ -	\$ -	\$ 67,082	\$ 67,082
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,916	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 236,826	\$ 236,826	\$ 118,413	\$ 592,065
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,699	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 105,162	\$ 110,420	\$ 47,323	\$ 262,905
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	77	EA		\$ 400	\$ 1,200	\$ -	\$ 30,870	\$ 92,609	\$ 123,478
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	77	EA		\$ 10	\$ 15	\$ -	\$ 772	\$ 1,158	\$ 1,929
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,602	\$ 184,807	\$ 246,409
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	25,123	CY		\$ 24.5	\$ 10.5	\$ -	\$ 615,515	\$ 263,792	\$ 879,308
2.27	Rock Excavation and Removal	13,376	CY		\$ 243	\$ 162	\$ -	\$ 3,250,472	\$ 2,166,981	\$ 5,417,453
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	20,065	CF		\$ 1.0	\$ 0.5	\$ -	\$ 20,065	\$ 10,032	\$ 30,097
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,444,148	\$ 13,874,209	\$ 9,004,614	\$ 36,322,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE	93,915	FT	\$ 166	\$ 100	\$ 66	\$ 15,589,950	\$ 9,353,970	\$ 6,235,980	\$ 31,179,900
3.2	Circuit #1- Cable Splicing- 320 DckV 5000 kcmil copper XLPE	60	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 1,160,940	\$ 590,789	\$ 168,797	\$ 1,920,526
3.3	Circuit #1- Cable Termination- 320 DckV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.4	Circuit #2- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 320 DckV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 320 DckV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320 DckV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320 DckV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 629,624	\$ 377,774	\$ 251,849	\$ 1,259,247
3.11	Fiber Optic Cable	46,958	FT	\$ 7	\$ 3	\$ 2	\$ 347,346	\$ 156,397	\$ 104,265	\$ 608,008
3.12	Ground Continuity Conductor	46,958	FT	\$ 13	\$ 8	\$ 5	\$ 612,281	\$ 353,450	\$ 235,634	\$ 1,201,365
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 18,612,600	\$ 10,891,459	\$ 7,013,404	\$ 36,517,464
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 34,153,196	\$ 35,052,057	\$ 20,143,277	\$ 89,348,530
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,655,860	\$ 1,103,907	\$ -	\$ 1,655,860	\$ 1,103,907	\$ 2,759,767
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		893,485.30		\$ -	\$ 893,485	\$ -	\$ 893,485
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		3,573,941.22		\$ -	\$ 3,573,941	\$ -	\$ 3,573,941
4.4	Utility PM and Project Oversight	1	LS		893,485.30		\$ -	\$ 893,485	\$ -	\$ 893,485
4.5	Site Accommodation, Facilities, Storage	1	LS	893,485.30			\$ 893,485	\$ -	\$ -	\$ 893,485
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,467,427	\$ -	\$ -	\$ 4,467,427	\$ -	\$ 4,467,427
4.7	LiDAR /GPR	1.0	LS		\$ 160,827	\$ 107,218	\$ -	\$ 160,827	\$ 107,218	\$ 268,046
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 375,264	\$ 250,176	\$ -	\$ 375,264	\$ 250,176	\$ 625,440
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 893,485		\$ -	\$ 893,485	\$ -	\$ 893,485
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 268,046		\$ -	\$ 268,046	\$ -	\$ 268,046
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 123,767	\$ -	\$ -	\$ 123,767	\$ 123,767
4.16	Legal Fees (Real estate)	1.00	LS		-	3,713.00	\$ -	\$ -	\$ 3,713	\$ 3,713
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,180,000	\$ -	\$ -	\$ 3,180,000	\$ 3,180,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 34,153,196.04			\$ 3,032,804	\$ -	\$ -	\$ 3,032,804
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 89,349	\$ -	\$ -	\$ 89,349	\$ 89,349
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,926,289	\$ 14,226,390	\$ 4,874,509	\$ 23,027,188

NEXTera Energy- TO42 Core 7

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Two circuits (two lines, single circuit each)

EGC-Dunwoodie 345KV / Ruland-SprainBrook 345KV

Total: \$ 524,998,762

Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 116,979,561	\$ 104,729,644	\$ 71,163,184	\$ 292,872,389
2. TRANSITION STATION	\$ 920,987	\$ 1,160,115	\$ 1,105,523	\$ 3,186,625
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 13,335,838	\$ 46,001,031	\$ 15,365,954	\$ 74,702,824
SUBTOTAL (Costs):	\$ 131,236,386	\$ 151,890,790	\$ 87,634,662	\$ 370,761,837
CONTRACTOR MARK-UP (OH&P)	\$ 23,622,549	\$ 27,340,342	\$ 15,774,239	\$ 66,737,131
SUBTOTAL:	\$ 154,858,935	\$ 179,231,132	\$ 103,408,901	\$ 437,498,968
CONTINGENCY ON ENTIRE PROJECT	\$ 30,971,787	\$ 35,846,226	\$ 20,681,780	\$ 87,499,794
TOTAL:	\$ 185,830,722	\$ 215,077,358	\$ 124,090,681	\$ 524,998,762

Description of Work: New Rochelle landing - Hempstead Harbor Landing. Part of any Dunwoodie to Shore/Ruland/EGC 345 kV project segment (Include HDD's to get onshore at both ends of route) 1600 mm2 Tri-Core										
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Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	200,260	FT	\$ 537	\$ 400	\$ 250	\$ 107,539,534	\$ 80,103,936	\$ 50,064,960	\$ 237,708,430
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 10,135,879	\$ 6,757,252	\$ -	\$ 10,135,879	\$ 6,757,252	\$ 16,893,131
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.5	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	100,130	FT	\$ 7			\$ 740,661	\$ -	\$ -	\$ 740,661
1.8	Ground Continuity Conductor	100,130	FT	\$ 13			\$ 1,305,594	\$ -	\$ -	\$ 1,305,594
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	4,342	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,947,200	\$ 13,894,400	\$ 13,894,400	\$ 34,736,000
TOTAL - Submarine cable:							\$ 116,979,561	\$ 104,729,644	\$ 71,163,184	\$ 292,872,389
2. TRANSITION STATION										
2.1	Site Clearing	1.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 10,800	\$ 7,200	\$ 18,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	1,613	CY		24.50	10.50	\$ -	\$ 39,527	\$ 16,940	\$ 56,467
2.4	Site Grading- Excavation for Substation Pad	4,840	CY		9.00	6.00	\$ -	\$ 43,560	\$ 29,040	\$ 72,600
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,614	CY		21.00	9.00	\$ -	\$ 54,885.60	\$ 23,522.40	\$ 78,408.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,920	CY		2.40	1.60	\$ -	\$ 9,409	\$ 6,273	\$ 15,682
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	2,614	CY	25.00	2.40	1.60	\$ 65,340	\$ 6,273	\$ 4,182	\$ 75,794
2.8	Install substation 8" pad base	4,840	SY	11.00	6.00	4.00	\$ 53,240	\$ 29,040	\$ 19,360	\$ 101,640
2.9	Site Surfacing - Aggregate 6" Thick	4,840	SY	16.50	4.50	3.00	\$ 79,860	\$ 21,780	\$ 14,520	\$ 116,160
2.10	7' Station Fence w/ Barbed Wire & Grounding	900	LF	13.85	13.85	6.92	\$ 12,463	\$ 12,463	\$ 6,232	\$ 31,158
2.11	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
2.12	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
2.13	Erosion Control-Silt fence install & remove	1,500	LF	2.41	3.16	0.72	\$ 3,615	\$ 4,740	\$ 1,080	\$ 9,435
2.14	Temporary fencing	1,000	LF	7.50	5.25	2.25	\$ 7,500	\$ 5,250	\$ 2,250	\$ 15,000
2.15	345kV, Cable sealing end - 3 Ph	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.16	345kV, lighting arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.17	345kV, Cable sealing end - 3 Ph	12	EA	8,346.00	5,758.74	3,839.16	\$ 100,152	\$ 69,105	\$ 46,070	\$ 215,327
2.18	345kV, lighting arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	AL. Bus Tubing, 5" SCH 80	420	LF	25.00	184.94	123.29	\$ 10,500	\$ 77,674	\$ 51,783	\$ 139,957
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	267	LF	2.09	-	-	\$ 558	\$ -	\$ -	\$ 558
2.22	Caweld, DSA, 4/0 , T, CROSS	133	EA	165.00	75.00		\$ 22,000	\$ 10,000	\$ -	\$ 32,000
2.23	Ground Rod, 3/4" x 15'	36	EA	135.00	67.50	7.50	\$ 4,860	\$ 2,430	\$ 270	\$ 7,560
2.24	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.25	Splice Vault Excavation	5,177	CY		\$ 17.5	\$ 7.5	\$ -	\$ 90,596	\$ 38,827	\$ 129,422
2.26	Splice Vault Supply & Installation	8	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 364,000	\$ 171,600	\$ 400,400	\$ 936,000
2.27	Splice Vault Backfill	1,553	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,743	\$ 9,318	\$ 31,061
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	4,711	CY		\$ 24.5	\$ 10.5	\$ -	\$ 115,419	\$ 49,465	\$ 164,884
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	5,177	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,177	\$ 2,588	\$ 7,765
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 920,987	\$ 1,160,115	\$ 1,105,523	\$ 3,186,625
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 117,900,548	\$ 105,889,759	\$ 72,268,707	\$ 296,059,014
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		11,842,360.55		\$ -	\$ 11,842,361	\$ -	\$ 11,842,361
3.4	Utility PM and Project Oversight	1	LS		2,960,590.14		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.5	Site Accommodation, Facilities, Storage	1	LS	2,960,590.14			\$ 2,960,590	\$ -	\$ -	\$ 2,960,590
	Engineering									
3.6	Design Engineering	1	LS		\$ 14,802,951		\$ -	\$ 14,802,951	\$ -	\$ 14,802,951
3.7	Surveying/Staking	1	LS		\$ 2,072,413		\$ -	\$ 2,072,413	\$ -	\$ 2,072,413
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,960,590		\$ -	\$ 2,960,590	\$ -	\$ 2,960,590
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 888,177		\$ -	\$ 888,177	\$ -	\$ 888,177
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 842,480	\$ -	\$ -	\$ 842,480	\$ 842,480
3.15	Legal Fees (Real estate)	1.00	LS		-	25,274.40	\$ -	\$ -	\$ 25,274	\$ 25,274
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 117,900,548			\$ 10,375,248	\$ -	\$ -	\$ 10,375,248
3.21	Contractor Permits	1	LS		\$ 296,059		\$ -	\$ 296,059	\$ -	\$ 296,059
3.22	Payment & Performance Bond	1	LS			\$ 10,480,000	\$ -	\$ -	\$ 10,480,000	\$ 10,480,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,335,838	\$ 46,001,031	\$ 15,365,954	\$ 74,702,824

NEXTera Energy- TO42 Core 7

Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit

Northport-SprainBrook 320KV DC

Total: \$ 528,901,092

New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 71,948,691	\$ 139,544,959	\$ 90,274,548	\$ 301,768,198
2. TRANSITION STATION	\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 9,363,374	\$ 47,125,551	\$ 14,772,680	\$ 71,261,605
SUBTOTAL (Costs):	\$ 81,418,065	\$ 186,843,391	\$ 105,256,264	\$ 373,517,721
CONTRACTOR MARK-UP (OH&P)	\$ 14,655,252	\$ 33,631,810	\$ 18,946,128	\$ 67,233,190
SUBTOTAL:	\$ 96,073,317	\$ 220,475,201	\$ 124,202,392	\$ 440,750,910
CONTINGENCY ON ENTIRE PROJECT	\$ 19,214,663	\$ 44,095,040	\$ 24,840,478	\$ 88,150,182
TOTAL:	\$ 115,287,981	\$ 264,570,242	\$ 149,042,870	\$ 528,901,092

Description of Work: Northport-New Rochelle landing. Part of Northport to Sprainbrook 320 kV DC project segment, 5000kCMIL, Cu, Single Core, XLPE, submarine cable (25.38 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 320kV DC, 5000kCMIL, Cu, Single Core, XLPE, Submarine	294,814	FT	\$ 212	\$ 400	\$ 250	\$ 62,500,585	\$ 117,925,632	\$ 73,703,520	\$ 254,129,737
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 14,921,613	\$ 9,947,742	\$ -	\$ 14,921,613	\$ 9,947,742	\$ 24,869,354
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.5	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	294,814	FT	\$ 7			\$ 2,180,740	\$ -	\$ -	\$ 2,180,740
1.8	Ground Continuity Conductor	294,814	FT	\$ 13			\$ 3,844,081	\$ -	\$ -	\$ 3,844,081
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	4,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 3,200,000	\$ 6,400,000	\$ 6,400,000	\$ 16,000,000
TOTAL - Submarine cable:							\$ 71,948,691	\$ 139,544,959	\$ 90,274,548	\$ 301,768,198
2. TRANSITION STATION										
2.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
2.4	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.8	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
2.9	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
2.10	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
2.11	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
2.12	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
2.13	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
2.14	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, lighting arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
2.18	345kV, lighting arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
2.19	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
2.20	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
2.23	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	863	CY		\$ 17.5	\$ 7.5	\$ -	\$ 15,099	\$ 6,471	\$ 21,570
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	259	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,624	\$ 1,553	\$ 5,177
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	785	CY		\$ 24.5	\$ 10.5	\$ -	\$ 19,236	\$ 8,244	\$ 27,481
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	863	CF		\$ 1.0	\$ 0.5	\$ -	\$ 863	\$ 431	\$ 1,294
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 72,054,691	\$ 139,717,840	\$ 90,483,585	\$ 302,256,116
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,022,561.16		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.3	Construction Project Management / Supervision	1	LS		12,090,244.64		\$ -	\$ 12,090,245	\$ -	\$ 12,090,245
3.4	Utility PM and Project Oversight	1	LS		3,022,561.16		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.5	Site Accommodation, Facilities, Storage	1	LS	3,022,561.16			\$ 3,022,561	\$ -	\$ -	\$ 3,022,561
	Engineering									
3.6	Design Engineering	1	LS		\$ 15,112,806		\$ -	\$ 15,112,806	\$ -	\$ 15,112,806
3.7	Surveying/Staking	1	LS		\$ 2,115,793		\$ -	\$ 2,115,793	\$ -	\$ 2,115,793
3.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	2	EA		\$ 80,000		\$ -	\$ 160,000	\$ -	\$ 160,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,022,561		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.11	Environmental-special studies/investigation	1	LS		\$ 870,000		\$ -	\$ 870,000	\$ -	\$ 870,000
3.12	Warranties / LOC's	1	LS		\$ 906,768		\$ -	\$ 906,768	\$ -	\$ 906,768
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 206,485	\$ -	\$ -	\$ 206,485	\$ 206,485
3.15	Legal Fees (Real estate)	1.00	LS		-	6,194.55	\$ -	\$ -	\$ 6,195	\$ 6,195
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 72,054,691			\$ 6,340,813	\$ -	\$ -	\$ 6,340,813
3.21	Contractor Permits	1	LS		\$ 302,256		\$ -	\$ 302,256	\$ -	\$ 302,256
3.22	Payment & Performance Bond	1	LS			\$ 10,560,000	\$ -	\$ -	\$ 10,560,000	\$ 10,560,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,363,374	\$ 47,125,551	\$ 14,772,680	\$ 71,261,605

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	1,496	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,944	\$ 8,976	\$ 29,920
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	323,453	LF			\$ 0.25	\$ -	\$ -	\$ 80,863	\$ 80,863
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,093	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 239,299	\$ 239,299	\$ 119,650	\$ 598,248
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 106,260	\$ 111,573	\$ 47,817	\$ 265,651
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	72	EA		\$ 400	\$ 1,200	\$ -	\$ 28,601	\$ 85,803	\$ 114,404
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	72	EA		\$ 10	\$ 15	\$ -	\$ 715	\$ 1,073	\$ 1,788
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,434	\$ 184,303	\$ 245,737
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	42,569	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,042,930	\$ 446,970	\$ 1,489,901
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	34,241	CF		\$ 1.0	\$ 0.5	\$ -	\$ 34,241	\$ 17,121	\$ 51,362
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,557,491	\$ 11,869,190	\$ 7,439,973	\$ 34,866,655
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	56,604	FT	\$ 7	\$ 3	\$ 2	\$ 418,702	\$ 188,526	\$ 125,684	\$ 732,912
3.12	Ground Continuity Conductor	56,604	FT	\$ 13	\$ 8	\$ 5	\$ 738,063	\$ 426,060	\$ 284,040	\$ 1,448,163
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 31,593,752	\$ 19,088,955	\$ 12,365,870	\$ 63,048,577
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 49,688,907	\$ 43,412,704	\$ 24,793,749	\$ 117,895,360
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,046,194	\$ 1,364,129	\$ -	\$ 2,046,194	\$ 1,364,129	\$ 3,410,323
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.3	Construction Project Management / Supervision	1	LS		4,715,814.38		\$ -	\$ 4,715,814	\$ -	\$ 4,715,814
4.4	Utility PM and Project Oversight	1	LS		1,178,953.60		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.5	Site Accommodation, Facilities, Storage	1	LS	1,178,953.60			\$ 1,178,954	\$ -	\$ -	\$ 1,178,954
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,894,768	\$ -	\$ -	\$ 5,894,768	\$ -	\$ 5,894,768
4.7	LiDAR /GPR	1.0	LS		\$ 212,212	\$ 141,474	\$ -	\$ 212,212	\$ 141,474	\$ 353,686
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 495,161	\$ 330,107	\$ -	\$ 495,161	\$ 330,107	\$ 825,268
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,178,954		\$ -	\$ 1,178,954	\$ -	\$ 1,178,954
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 353,686		\$ -	\$ 353,686	\$ -	\$ 353,686
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 50,426	\$ -	\$ -	\$ 50,426	\$ 50,426
4.16	Legal Fees (Real estate)	1.00	LS		-	1,512.78	\$ -	\$ -	\$ 1,513	\$ 1,513
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,200,000	\$ -	\$ -	\$ 4,200,000	\$ 4,200,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 49,688,906.93			\$ 4,412,375	\$ -	\$ -	\$ 4,412,375
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 117,895	\$ -	\$ -	\$ 117,895	\$ 117,895
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,591,329	\$ 18,784,725	\$ 6,225,565	\$ 30,601,618

<u>NEXtera Energy- TO42 Core 7</u>	
<u>Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit</u>	
<u>(Ruland To Sprain Brook 345 kV)</u>	
Total:	\$ 349,868,481

	Total:	\$	349,868,481
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NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274
SUBTOTAL (Costs):	\$ 90,427,881	\$ 103,561,178	\$ 53,093,201	\$ 247,082,261
CONTRACTOR MARK-UP (OH&P)	\$ 16,277,019	\$ 18,641,012	\$ 9,556,776	\$ 44,474,807
SUBTOTAL:	\$ 106,704,900	\$ 122,202,190	\$ 62,649,977	\$ 291,557,067
CONTINGENCY ON ENTIRE PROJECT	\$ 21,340,980	\$ 24,440,438	\$ 12,529,995	\$ 58,311,413
TOTAL:	\$ 128,045,880	\$ 146,642,628	\$ 75,179,973	\$ 349,868,481

Description of Work: Ruland - Hempstead Harbor Landing (Shore Road, single circuit). 5000 kcmil copper XLPE, single cable per phase..										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	15.89	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 11,120,200	\$ 4,765,800	\$ 15,886,000
1.3	Flaggers	500	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 800,000	\$ 2,400,000	\$ 800,000	\$ 4,000,000
1.4	K Rail / Lane Control / Metal Plates	83,878	LF	\$ 30	\$ 18	\$ 12	\$ 2,516,342	\$ 1,509,805	\$ 1,006,537	\$ 5,032,685
1.5	Police Support	20,000.0	HR		\$ 120	\$ 27	\$ -	\$ 2,400,000	\$ 540,000	\$ 2,940,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	15.89	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 635,440	\$ 1,906,320	\$ 635,440	\$ 3,177,200
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	15.89	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,220,863	\$ 1,480,575	\$ 3,701,438
2.2	Formwork in Trench	643,225	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,286,449	\$ 964,837	\$ 321,612	\$ 2,572,899
2.3	Trench Excavation	53,602	CY		\$ 17.5	\$ 7.5	\$ -	\$ 938,036	\$ 402,015	\$ 1,340,051
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,350	SF	\$ 50	\$ 25	\$ 14	\$ 167,506	\$ 82,078	\$ 46,902	\$ 296,486
2.5	Supply & Install Thermal Backfill	28,141	CY	\$ 350	\$ 245	\$ 105	\$ 9,849,377	\$ 6,894,564	\$ 2,954,813	\$ 19,698,755
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,101	CY	\$ 200	\$ 125	\$ 50	\$ 2,620,247	\$ 1,637,654	\$ 655,062	\$ 4,912,963
2.9	Conduit 8" SCH 40PVC	335,512	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 9,595,652	\$ 1,902,355	\$ 815,295	\$ 12,313,302
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	167,756	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 590,502	\$ 528,432	\$ 226,471	\$ 1,345,404
2.12	Warning Tape	167,756	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 25,163	\$ 41,939	\$ 16,776	\$ 83,878
2.13	Trench Box Shoring (Vault)	49	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 885,876	\$ 1,328,814	\$ 2,214,689
2.14	Splice Vault Excavation	8,145	CY		\$ 17.5	\$ 7.5	\$ -	\$ 142,536	\$ 61,087	\$ 203,622
2.15	Splice Vault Supply & Installation	49	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,715,000	\$ 808,500	\$ 1,886,500	\$ 4,410,000
2.16	Splice Vault Backfill	2,443	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,209	\$ 14,661	\$ 48,869

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	805	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 644,000	\$ 1,288,000	\$ 1,288,000	\$ 3,220,000
2.18	HDD along Route	1,200	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 960,000	\$ 1,920,000	\$ 1,920,000	\$ 4,800,000
2.19	Air Test Ducts	503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LiDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 43,680	\$ 29,120	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXtera Energy- TO42 Core 7

Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits

Total: \$ 133,317,472

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576
SUBTOTAL (Costs):	\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757
CONTRACTOR MARK-UP (OH&P)	\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136
SUBTOTAL:	\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893
CONTINGENCY ON ENTIRE PROJECT	\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579
TOTAL:	\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472

Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversight	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LiDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXTera Energy- TO42 Core 7

Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXTera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,216
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	\$ -	\$ 1,492	\$ 2,239	\$ 3,731
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LiDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

NEXtera Energy- TO42 Core 7

Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit

(Pilgram to Northport kv)

Total: \$ 165,653,108

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365
SUBTOTAL (Costs):	\$ 42,682,442	\$ 49,673,108	\$ 24,631,109	\$ 116,986,658
CONTRACTOR MARK-UP (OH&P)	\$ 7,682,840	\$ 8,941,159	\$ 4,433,600	\$ 21,057,599
SUBTOTAL:	\$ 50,365,281	\$ 58,614,267	\$ 29,064,708	\$ 138,044,257
CONTINGENCY ON ENTIRE PROJECT	\$ 10,073,056	\$ 11,722,853	\$ 5,812,942	\$ 27,608,851
TOTAL:	\$ 60,438,338	\$ 70,337,121	\$ 34,877,650	\$ 165,653,108

Description of Work: Ruland - 138kV (399/567/900 MVA) 5000 kcmil copper XLPE, single cable per phase (8.34 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.34	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,838,000	\$ 2,502,000	\$ 8,340,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,035	LF	\$ 30	\$ 18	\$ 12	\$ 1,321,056	\$ 792,634	\$ 528,422	\$ 2,642,112
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.34	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 333,600	\$ 1,000,800	\$ 333,600	\$ 1,668,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.34	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,165,932	\$ 777,288	\$ 1,943,220
2.2	Formwork in Trench	346,914	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 693,827	\$ 520,370	\$ 173,457	\$ 1,387,654
2.3	Trench Excavation	28,909	CY		\$ 17.5	\$ 7.5	\$ -	\$ 505,916	\$ 216,821	\$ 722,737
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,807	SF	\$ 50	\$ 25	\$ 14	\$ 90,342	\$ 44,268	\$ 25,296	\$ 159,905
2.5	Supply & Install Thermal Backfill	15,177	CY	\$ 350	\$ 245	\$ 105	\$ 5,312,115	\$ 3,718,480	\$ 1,593,634	\$ 10,624,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,066	CY	\$ 200	\$ 125	\$ 50	\$ 1,413,191	\$ 883,244	\$ 353,298	\$ 2,649,733
2.9	Conduit 8" SCH 40PVC	176,141	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 5,037,627	\$ 998,718	\$ 428,022	\$ 6,464,367
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	88,070	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 310,008	\$ 277,422	\$ 118,895	\$ 706,325
2.12	Warning Tape	88,070	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,211	\$ 22,018	\$ 8,807	\$ 44,035
2.13	Trench Box Shoring (Vault)	24	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 433,898	\$ 650,847	\$ 1,084,746
2.14	Splice Vault Excavation	3,285	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,493	\$ 24,640	\$ 82,133
2.15	Splice Vault Supply & Installation	24	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 840,000	\$ 396,000	\$ 924,000	\$ 2,160,000
2.16	Splice Vault Backfill	986	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,798	\$ 5,914	\$ 19,712
2.17	Jack and Bore along Route	95	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 76,000	\$ 152,000	\$ 152,000	\$ 380,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	264,211	LF			\$ 0.25	\$ -	\$ -	\$ 66,053	\$ 66,053
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,481	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 230,729	\$ 230,729	\$ 115,364	\$ 576,822
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,578	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 102,455	\$ 107,577	\$ 46,105	\$ 256,136
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,264	\$ 84,791	\$ 113,055
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	71	EA		\$ 10	\$ 15	\$ -	\$ 707	\$ 1,060	\$ 1,766
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,710	\$ 182,130	\$ 242,840
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	40,572	CY		\$ 24.5	\$ 10.5	\$ -	\$ 994,013	\$ 426,006	\$ 1,420,019
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	24	EA			\$ 4,000	\$ -	\$ -	\$ 96,000	\$ 96,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	32,195	CF		\$ 1.0	\$ 0.5	\$ -	\$ 32,195	\$ 16,097	\$ 48,292
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	138,711	FT	\$ 145	\$ 87	\$ 58	\$ 20,113,078	\$ 12,067,847	\$ 8,045,231	\$ 40,226,155
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	72	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 424,656	\$ 708,947	\$ 202,556	\$ 1,336,159
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	24	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 639,816	\$ 383,890	\$ 255,926	\$ 1,279,632
3.11	Fiber Optic Cable	46,237	FT	\$ 7	\$ 3	\$ 2	\$ 342,015	\$ 153,997	\$ 102,665	\$ 598,676
3.12	Ground Continuity Conductor	46,237	FT	\$ 13	\$ 8	\$ 5	\$ 602,884	\$ 348,026	\$ 232,017	\$ 1,182,926
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 38,346,592	\$ 35,001,236	\$ 19,719,466	\$ 93,067,293
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,641,621	\$ 1,094,414	\$ -	\$ 1,641,621	\$ 1,094,414	\$ 2,736,035
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.3	Construction Project Management / Supervision	1	LS		3,722,691.74		\$ -	\$ 3,722,692	\$ -	\$ 3,722,692
4.4	Utility PM and Project Oversight	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.5	Site Accommodation, Facilities, Storage	1	LS	930,672.93			\$ 930,673	\$ -	\$ -	\$ 930,673
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,653,365	\$ -	\$ -	\$ 4,653,365	\$ -	\$ 4,653,365
4.7	LiDAR /GPR	1.0	LS		\$ 167,521	\$ 111,681	\$ -	\$ 167,521	\$ 111,681	\$ 279,202
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 390,883	\$ 260,588	\$ -	\$ 390,883	\$ 260,588	\$ 651,471
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 930,673		\$ -	\$ 930,673	\$ -	\$ 930,673
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 279,202		\$ -	\$ 279,202	\$ -	\$ 279,202
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 34,478	\$ -	\$ -	\$ 34,478	\$ 34,478
4.16	Legal Fees (Real estate)	1.00	LS		-	1,034.34	\$ -	\$ -	\$ 1,034	\$ 1,034
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,300,000	\$ -	\$ -	\$ 3,300,000	\$ 3,300,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 38,346,591.60			\$ 3,405,177	\$ -	\$ -	\$ 3,405,177
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 93,067	\$ -	\$ -	\$ 93,067	\$ 93,067
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365

NEXtera Energy- TO42 Core 7

Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO42 Core 7

Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO42 Core 7

Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit

(EGC-Jamaica 138kv)

Total: \$ 232,454,478

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit(EGC-Jamaica 138kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126
SUBTOTAL (Costs):	\$ 59,773,498	\$ 69,663,101	\$ 34,726,168	\$ 164,162,767
CONTRACTOR MARK-UP (OH&P)	\$ 10,759,230	\$ 12,539,358	\$ 6,250,710	\$ 29,549,298
SUBTOTAL:	\$ 70,532,728	\$ 82,202,459	\$ 40,976,879	\$ 193,712,065
CONTINGENCY ON ENTIRE PROJECT	\$ 14,106,546	\$ 16,440,492	\$ 8,195,376	\$ 38,742,413
TOTAL:	\$ 84,639,274	\$ 98,642,950	\$ 49,172,254	\$ 232,454,478

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 113 - Jamaica to East Garden City 138 kV Onshore UG Cables -Single circuit(EGC-Jamaica 138kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,875,456	\$ 14,141,314	\$ 5,663,742	\$ 22,680,512
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.59	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	480,266	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 960,531	\$ 720,398	\$ 240,133	\$ 1,921,062
2.3	Trench Excavation	40,022	CY		\$ 17.5	\$ 7.5	\$ -	\$ 700,387	\$ 300,166	\$ 1,000,553
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,501	SF	\$ 50	\$ 25	\$ 14	\$ 125,069	\$ 61,284	\$ 35,019	\$ 221,372
2.5	Supply & Install Thermal Backfill	21,012	CY	\$ 350	\$ 245	\$ 105	\$ 7,354,067	\$ 5,147,847	\$ 2,206,220	\$ 14,708,134
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,782	CY	\$ 200	\$ 125	\$ 50	\$ 1,956,415	\$ 1,222,760	\$ 489,104	\$ 3,668,279
2.9	Conduit 8" SCH 40PVC	244,781	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 7,000,731	\$ 1,387,907	\$ 594,817	\$ 8,983,455
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	122,390	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 430,814	\$ 385,530	\$ 165,227	\$ 981,571
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 30,598	\$ 12,239	\$ 61,195
2.13	Trench Box Shoring (Vault)	38	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 687,006	\$ 1,030,508	\$ 1,717,514
2.14	Splice Vault Excavation	5,202	CY		\$ 17.5	\$ 7.5	\$ -	\$ 91,031	\$ 39,013	\$ 130,044
2.15	Splice Vault Supply & Installation	38	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,330,000	\$ 627,000	\$ 1,463,000	\$ 3,420,000
2.16	Splice Vault Backfill	1,561	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,847	\$ 9,363	\$ 31,211
2.17	Jack and Bore along Route	250	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 200,000	\$ 400,000	\$ 400,000	\$ 1,000,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	367,171	LF			\$ 0.25	\$ -	\$ -	\$ 91,793	\$ 91,793
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	22,979	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 321,707	\$ 321,707	\$ 160,854	\$ 804,269
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,383	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 142,853	\$ 149,996	\$ 64,284	\$ 357,134
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	98	EA		\$ 400	\$ 1,200	\$ -	\$ 39,128	\$ 117,385	\$ 156,513
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	98	EA		\$ 10	\$ 15	\$ -	\$ 978	\$ 1,467	\$ 2,446
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	210	EA		\$ 400	\$ 1,200	\$ -	\$ 84,046	\$ 252,139	\$ 336,186
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	56,762	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,390,679	\$ 596,005	\$ 1,986,684
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	38	EA			\$ 4,000	\$ -	\$ -	\$ 152,000	\$ 152,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	45,224	CF		\$ 1.0	\$ 0.5	\$ -	\$ 45,224	\$ 22,612	\$ 67,836
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 19,840,547	\$ 15,583,902	\$ 9,822,382	\$ 45,246,831
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	114	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 672,372	\$ 1,122,499	\$ 320,714	\$ 2,115,585
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	38	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 1,013,042	\$ 607,825	\$ 405,217	\$ 2,026,084
3.11	Fiber Optic Cable	64,255	FT	\$ 7	\$ 3	\$ 2	\$ 475,294	\$ 214,008	\$ 142,672	\$ 831,973
3.12	Ground Continuity Conductor	64,255	FT	\$ 13	\$ 8	\$ 5	\$ 837,820	\$ 483,647	\$ 322,431	\$ 1,643,899
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 30,983,420	\$ 19,257,602	\$ 12,388,277	\$ 62,629,299
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 53,699,423	\$ 48,982,817	\$ 27,874,401	\$ 130,556,641
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,305,717	\$ 1,537,144	\$ -	\$ 2,305,717	\$ 1,537,144	\$ 3,842,861
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.3	Construction Project Management / Supervision	1	LS		5,222,265.65		\$ -	\$ 5,222,266	\$ -	\$ 5,222,266
4.4	Utility PM and Project Oversight	1	LS		1,305,566.41		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.5	Site Accommodation, Facilities, Storage	1	LS	1,305,566.41			\$ 1,305,566	\$ -	\$ -	\$ 1,305,566
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,527,832	\$ -	\$ -	\$ 6,527,832	\$ -	\$ 6,527,832
4.7	LiDAR /GPR	1.0	LS		\$ 235,002	\$ 156,668	\$ -	\$ 235,002	\$ 156,668	\$ 391,670
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 548,338	\$ 365,559	\$ -	\$ 548,338	\$ 365,559	\$ 913,896
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,305,566		\$ -	\$ 1,305,566	\$ -	\$ 1,305,566
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 391,670		\$ -	\$ 391,670	\$ -	\$ 391,670
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,640,000	\$ -	\$ -	\$ 4,640,000	\$ 4,640,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 53,699,423.07			\$ 4,768,509	\$ -	\$ -	\$ 4,768,509
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 130,557	\$ -	\$ -	\$ 130,557	\$ 130,557
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,074,075	\$ 20,680,283	\$ 6,851,768	\$ 33,606,126

NEXtera Energy- TO42 Core 7

Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit

Total: \$ 5,354,910

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351
SUBTOTAL (Costs):	\$ 1,083,440	\$ 2,001,924	\$ 696,353	\$ 3,781,716
CONTRACTOR MARK-UP (OH&P)	\$ 195,019	\$ 360,346	\$ 125,343	\$ 680,709
SUBTOTAL:	\$ 1,278,459	\$ 2,362,270	\$ 821,696	\$ 4,462,425
CONTINGENCY ON ENTIRE PROJECT	\$ 255,692	\$ 472,454	\$ 164,339	\$ 892,485
TOTAL:	\$ 1,534,151	\$ 2,834,724	\$ 986,035	\$ 5,354,910

Description of Work: Rebuild 0.2 mile of UG line (trench, conduits and cable), single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.20	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	1,056	LF	\$ 30	\$ 18	\$ 12	\$ 31,680	\$ 19,008	\$ 12,672	\$ 63,360
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	0.20	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 8,000	\$ 24,000	\$ 8,000	\$ 40,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.20	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 27,960	\$ 18,640	\$ 46,600
2.2	Formwork in Trench	8,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 16,512	\$ 12,384	\$ 4,128	\$ 33,024
2.3	Trench Excavation	688	CY		\$ 17.5	\$ 7.5	\$ -	\$ 12,040	\$ 5,160	\$ 17,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	43	SF	\$ 50	\$ 25	\$ 14	\$ 2,150	\$ 1,054	\$ 602	\$ 3,806
2.5	Supply & Install Thermal Backfill	361	CY	\$ 350	\$ 245	\$ 105	\$ 126,420	\$ 88,494	\$ 37,926	\$ 252,840
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	168	CY	\$ 200	\$ 125	\$ 50	\$ 33,632	\$ 21,020	\$ 8,408	\$ 63,060
2.9	Conduit 8" SCH 40PVC	4,224	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 120,806	\$ 23,950	\$ 10,264	\$ 155,021
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	2,112	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 7,434	\$ 6,653	\$ 2,851	\$ 16,938
2.12	Warning Tape	2,112	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 317	\$ 528	\$ 211	\$ 1,056
2.13	Trench Box Shoring (Vault)	1	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 18,079	\$ 27,119	\$ 45,198
2.14	Splice Vault Excavation	137	CY		\$ 17.5	\$ 7.5	\$ -	\$ 2,396	\$ 1,027	\$ 3,422
2.15	Splice Vault Supply & Installation	1	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 35,000	\$ 16,500	\$ 38,500	\$ 90,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.16	Splice Vault Backfill	41	CY		\$ 14.0	\$ 6.0	\$ -	\$ 575	\$ 246	\$ 821
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	6,336	LF			\$ 0.25	\$ -	\$ -	\$ 1,584	\$ 1,584
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 5,696	\$ 5,696	\$ 2,848	\$ 14,241
2.21	PVMT, AGGREGATE, 10" , BASE COURSE	113	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 2,529	\$ 2,656	\$ 1,138	\$ 6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$ 400	\$ 1,200	\$ -	\$ 673	\$ 2,018	\$ 2,691
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$ 10	\$ 15	\$ -	\$ 17	\$ 25	\$ 42
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LiDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	\$ 1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

NEXtera Energy- TO42 Core 7

Other Comp. 138kV Upgrades

Total: \$ 16,870,335

Other Comp. 138kV Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Comp. 138kV Upgrades				
1. West Bus-Kings CT Upgrade	\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378
CONTRACTOR MARK-UP (OH&P)	\$ 829,380	\$ 872,432	\$ 442,722	\$ 2,144,534
SUBTOTAL:	\$ 5,437,050	\$ 5,719,276	\$ 2,902,287	\$ 14,058,612
CONTINGENCY ON ENTIRE PROJECT	\$ 1,087,410	\$ 1,143,855	\$ 580,457	\$ 2,811,722
TOTAL:	\$ 6,524,459	\$ 6,863,131	\$ 3,482,744	\$ 16,870,335

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1. West Bus-Kings CT Upgrade										
1.1	CT Replacement	12	EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ 216,000	\$ 95,641	\$ 40,989	\$ 352,630
1.2	CT Replacement-foundation	60	CY	\$ 704	\$ 804	\$ 503	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
1.3	CT Replacement-structure	12	EA	\$ 1,684	\$ 1,178	\$ 505	\$ 20,202	\$ 14,141	\$ 6,061	\$ 40,404
							\$ -	from	\$ -	\$ -
TOTAL - West Bus-Kings-Pilgrim CT Upgrade :							\$ 278,435	\$ 158,049	\$ 77,216	\$ 513,700
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,155,935.10	\$ 2,096,798.80	\$ 2,015,966.10	\$ 8,268,700.00
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 123,383	\$ 82,255	\$ -	\$ 123,383	\$ 82,255	\$ 205,638

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.3	Construction Project Management / Supervision	1	LS		330,748.00		\$ -	\$ 330,748	\$ -	\$ 330,748
4.4	Utility PM and Project Oversight	1	LS		82,687.00		\$ -	\$ 82,687	\$ -	\$ 82,687
4.5	Site Accommodation, Facilities, Storage	1	LS	82,687.00			\$ 82,687	\$ -	\$ -	\$ 82,687
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 413,435	\$ -	\$ -	\$ 413,435	\$ -	\$ 413,435
4.7	LiDAR	1.00	LS		\$ 14,884	\$ 9,922	\$ -	\$ 14,884	\$ 9,922	\$ 24,806
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,729	\$ 23,152	\$ -	\$ 34,729	\$ 23,152	\$ 57,881
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,687		\$ -	\$ 82,687	\$ -	\$ 82,687
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,806		\$ -	\$ 24,806	\$ -	\$ 24,806
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 320,000	\$ -	\$ -	\$ 320,000	\$ 320,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,155,935.10			\$ 369,047	\$ -	\$ -	\$ 369,047
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,269	\$ -	\$ -	\$ 8,269	\$ 8,269
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 451,734	\$ 2,750,045	\$ 443,599	\$ 3,645,378

NEXtera Energy- TO42 Core 7

Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits
(Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)

Total: \$ 8,289,473,653

ew Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 633,661,222	\$ 1,284,605,789	\$ 809,554,812	\$ 2,727,821,823
2. TRANSITION STATION	\$ 1,058,356,000	\$ 635,122,881	\$ 423,509,037	\$ 2,116,987,918
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 197,345,613	\$ 642,200,076	\$ 169,792,630	\$ 1,009,338,319
SUBTOTAL (Costs):	\$ 1,889,362,835	\$ 2,561,928,746	\$ 1,402,856,479	\$ 5,854,148,060
CONTRACTOR MARK-UP (OH&P)	\$ 340,085,310	\$ 461,147,174	\$ 252,514,166	\$ 1,053,746,651
SUBTOTAL:	\$ 2,229,448,146	\$ 3,023,075,920	\$ 1,655,370,645	\$ 6,907,894,711
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ 1,381,578,942
TOTAL:	\$ 2,229,448,146	\$ 3,023,075,920	\$ 1,655,370,645	\$ 8,289,473,653

Description of Work: Part of Offshore Platform HSA to Buchanan 320kV #1, #2 HVDC project segment, 5000kCMIL, Cu, Single Core, XLPE, submarine cable (122.5 miles)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 320kV DC, 5000kCMIL, Cu, Single Core, XLPE, Submarine	2,845,920	FT	\$ 212	\$ 400	\$ 250	\$ 603,335,040	\$ 1,138,368,000	\$ 711,480,000	\$ 2,453,183,040
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 144,042,360	\$ 96,028,240	\$ -	\$ 144,042,360	\$ 96,028,240	\$ 240,070,600
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.5	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	1,422,960	FT	\$ 7			\$ 10,525,635	\$ -	\$ -	\$ 10,525,635
1.8	Ground Continuity Conductor	1,422,960	FT	\$ 13			\$ 18,553,975	\$ -	\$ -	\$ 18,553,975
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	1,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 800,000	\$ 1,600,000	\$ 1,600,000	\$ 4,000,000
TOTAL - Submarine cable:							\$ 633,661,222	\$ 1,284,605,789	\$ 809,554,812	\$ 2,727,821,823
2. TRANSITION STATION										
2.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
2.4	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.8	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
2.9	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
2.10	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
2.11	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
2.12	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
2.13	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
2.14	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, lighting arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
2.18	345kV, lighting arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
2.19	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
2.20	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
2.22	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
2.23	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	863	CY		\$ 17.5	\$ 7.5	\$ -	\$ 15,099	\$ 6,471	\$ 21,570
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	259	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,624	\$ 1,553	\$ 5,177
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	785	CY		\$ 24.5	\$ 10.5	\$ -	\$ 19,236	\$ 8,244	\$ 27,481
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	863	CF		\$ 1.0	\$ 0.5	\$ -	\$ 863	\$ 431	\$ 1,294
2.36	Offshore HVDC Platform	2	EA	\$ 363,750,000	\$ 218,250,000.0	\$ 145,500,000.0	\$ 727,500,000	\$ 436,500,000	\$ 291,000,000	\$ 1,455,000,000
2.37	Offshore_HVDC 1200MW Monopoles	2.0	EA	165,375,000.00	99,225,000.00	66,150,000.00	\$ 330,750,000.00	\$ 198,450,000.00	\$ 132,300,000.00	\$ 661,500,000
TOTAL - Transition station :							\$ 1,058,356,000	\$ 635,122,881	\$ 423,509,037	\$ 2,116,987,918
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 1,692,017,222	\$ 1,919,728,670	\$ 1,233,063,849	\$ 4,844,809,741
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		48,448,097.41		\$ -	\$ 48,448,097	\$ -	\$ 48,448,097
3.3	Construction Project Management / Supervision	1	LS		193,792,389.64		\$ -	\$ 193,792,390	\$ -	\$ 193,792,390
3.4	Utility PM and Project Oversight	1	LS		48,448,097.41		\$ -	\$ 48,448,097	\$ -	\$ 48,448,097
3.5	Site Accommodation, Facilities, Storage	1	LS	48,448,097.41			\$ 48,448,097	\$ -	\$ -	\$ 48,448,097
	Engineering									
3.6	Design Engineering	1	LS		\$ 242,240,487		\$ -	\$ 242,240,487	\$ -	\$ 242,240,487
3.7	Surveying/Staking	1	LS		\$ 33,913,668		\$ -	\$ 33,913,668	\$ -	\$ 33,913,668
3.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	2	EA		\$ 80,000		\$ -	\$ 160,000	\$ -	\$ 160,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 48,448,097		\$ -	\$ 48,448,097	\$ -	\$ 48,448,097
3.12	Environmental-special studies/investigation	1	LS		\$ 870,000		\$ -	\$ 870,000	\$ -	\$ 870,000
3.13	Warranties / LOC's	1	LS		\$ 14,534,429		\$ -	\$ 14,534,429	\$ -	\$ 14,534,429
3.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 12,262	\$ -	\$ -	\$ 12,262	\$ 12,262
3.16	Legal Fees (Real estate)	1.00	LS		-	367.86	\$ -	\$ -	\$ 368	\$ 368
3.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
3.19	Sales Tax on Materials	8.8%	LS	\$ 1,692,017,222			\$ 148,897,516	\$ -	\$ -	\$ 148,897,516
3.20	Contractor Permits	1	LS		\$ 4,844,810		\$ -	\$ 4,844,810	\$ -	\$ 4,844,810
3.21	Payment & Performance Bond	1	LS			\$ 165,780,000	\$ -	\$ -	\$ 165,780,000	\$ 165,780,000
3.22	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 197,345,613	\$ 642,200,076	\$ 169,792,630	\$ 1,009,338,319

<p align="center"> <u>NEXTera Energy- TO42 Core 7</u> <u>Comp 254 - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Double circuits</u> <u>(Hudson South OSW platform #1 & #2- Buchanan HVDC #1 &#2 320 kV)</u> </p>	
Total:	\$ 46,564,185

NEXtera Energy- TO42 Core 7				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 425,600	\$ 2,180,560	\$ 831,440	\$ 3,437,600
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,083,818	\$ 3,112,181	\$ 2,240,355	\$ 8,436,354
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 7,390,470	\$ 4,131,620	\$ 2,559,359	\$ 14,081,449
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,227,464	\$ 4,345,372	\$ 1,356,072	\$ 6,928,909
SUBTOTAL (Costs):	\$ 12,127,352	\$ 13,769,733	\$ 6,987,226	\$ 32,884,312
CONTRACTOR MARK-UP (OH&P)	\$ 2,182,923	\$ 2,478,552	\$ 1,257,701	\$ 5,919,176
SUBTOTAL:	\$ 14,310,275	\$ 16,248,285	\$ 8,244,927	\$ 38,803,488
CONTINGENCY ON ENTIRE PROJECT	\$ 2,862,055	\$ 3,249,657	\$ 1,648,985	\$ 7,760,698
TOTAL:	\$ 17,172,330	\$ 19,497,942	\$ 9,893,912	\$ 46,564,185

Description of Work: Part of Offshore Platform HSA to Buchanan 320kV #1, #2 HVDC project segment, 320 DckV 5000 kcmil copper XLPE (1.5 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.50	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,050,000	\$ 450,000	\$ 1,500,000
1.3	Flaggers	80	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 128,000	\$ 384,000	\$ 128,000	\$ 640,000
1.4	K Rail / Lane Control / Metal Plates	7,920	LF	\$ 30	\$ 18	\$ 12	\$ 237,600	\$ 142,560	\$ 95,040	\$ 475,200
1.5	Police Support	3,200.0	HR		\$ 120	\$ 27	\$ -	\$ 384,000	\$ 86,400	\$ 470,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	1.50	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 60,000	\$ 180,000	\$ 60,000	\$ 300,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 425,600	\$ 2,180,560	\$ 831,440	\$ 3,437,600
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	1.5	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 209,700	\$ 139,800	\$ 349,500
2.2	Formwork in Trench	63,360	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 126,720	\$ 95,040	\$ 31,680	\$ 253,440
2.3	Trench Excavation	3,168	CY		\$ 17.5	\$ 7.5	\$ -	\$ 55,440	\$ 23,760	\$ 79,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	330	SF	\$ 50	\$ 25	\$ 14	\$ 16,500	\$ 8,085	\$ 4,620	\$ 29,205
2.5	Supply & Install Thermal Backfill	1,907	CY	\$ 350	\$ 245	\$ 105	\$ 667,282	\$ 467,097	\$ 200,185	\$ 1,334,564
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,928	CY	\$ 200	\$ 125	\$ 50	\$ 385,616	\$ 241,010	\$ 96,404	\$ 723,030
2.9	Conduit 8" SCH 40PVC	47,520	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 1,359,072	\$ 269,438	\$ 115,474	\$ 1,743,984
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	31,680	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 111,514	\$ 99,792	\$ 42,768	\$ 254,074
2.12	Warning Tape	15,840	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 2,376	\$ 3,960	\$ 1,584	\$ 7,920
2.13	Trench Box Shoring (Vault)	10	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 180,791	\$ 271,186	\$ 451,977
2.14	Splice Vault Excavation	821	CY		\$ 17.5	\$ 7.5	\$ -	\$ 14,373	\$ 6,160	\$ 20,533
2.15	Splice Vault Supply & Installation	10	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 350,000	\$ 165,000	\$ 385,000	\$ 900,000
2.16	Splice Vault Backfill	246	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,450	\$ 1,478	\$ 4,928
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	79,200	LF			\$ 0.25	\$ -	\$ -	\$ 19,800	\$ 19,800
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	3,202	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 44,831	\$ 44,831	\$ 22,416	\$ 112,078
2.21	PVMT, AGGREGATE, 10", BASE COURSE	890	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 19,907	\$ 20,903	\$ 8,958	\$ 49,768
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	19	EA		400	\$ 1,200	\$ -	\$ 7,712	\$ 23,137	\$ 30,849
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	19	EA		10	\$ 15	\$ -	\$ 193	\$ 289	\$ 482
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	19	EA		400	\$ 1,200	\$ -	\$ 7,626	\$ 22,878	\$ 30,504
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	4,866	CY		\$ 24.5	\$ 10.5	\$ -	\$ 119,212	\$ 51,091	\$ 170,303
2.27	Rock Excavation and Removal	2,660	CY		\$ 243	\$ 162	\$ -	\$ 646,272	\$ 430,848	\$ 1,077,120
2.28	Dewatering	10	EA			\$ 4,000	\$ -	\$ -	\$ 40,000	\$ 40,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	3,989	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,989	\$ 1,995	\$ 5,984
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,083,818	\$ 3,112,181	\$ 2,240,355	\$ 8,436,354
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE	16,632	FT	\$ 166	\$ 100	\$ 66	\$ 2,760,912	\$ 1,656,547	\$ 1,104,365	\$ 5,521,824
3.2	Circuit #1- Cable Splicing- 320 DckV 5000 kcmil copper XLPE	20	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 386,980	\$ 196,930	\$ 56,266	\$ 640,175
3.3	Circuit #1- Cable Termination- 320 DckV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.4	Circuit #2- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE	16,632	FT	\$ 166	\$ 100	\$ 66	\$ 2,760,912	\$ 1,656,547	\$ 1,104,365	\$ 5,521,824
3.5	Circuit #2- Cable Splicing- 320 DckV 5000 kcmil copper XLPE	20	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 386,980	\$ 196,930	\$ 56,266	\$ 640,175
3.6	Circuit #2- Cable Termination- 320 DckV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.7	Circuit #3- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320 DckV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320 DckV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	10	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 209,875	\$ 125,925	\$ 83,950	\$ 419,749
3.11	Fiber Optic Cable	16,632	FT	\$ 7	\$ 3	\$ 55,395	\$ 123,027	\$ 55,395	\$ 36,930	\$ 215,351
3.12	Ground Continuity Conductor	16,632	FT	\$ 13	\$ 8	\$ 5	\$ 216,865	\$ 125,189	\$ 83,459	\$ 425,513
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 7,390,470	\$ 4,131,620	\$ 2,559,359	\$ 14,081,449
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 10,899,888	\$ 9,424,361	\$ 5,631,154	\$ 25,955,403
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 451,665	\$ 301,110	\$ -	\$ 451,665	\$ 301,110	\$ 752,776
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		259,554.03		\$ -	\$ 259,554	\$ -	\$ 259,554
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,038,216.11		\$ -	\$ 1,038,216	\$ -	\$ 1,038,216
4.4	Utility PM and Project Oversight	1	LS		259,554.03		\$ -	\$ 259,554	\$ -	\$ 259,554
4.5	Site Accommodation, Facilities, Storage	1	LS	259,554.03			\$ 259,554	\$ -	\$ -	\$ 259,554
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,297,770	\$ -	\$ -	\$ 1,297,770	\$ -	\$ 1,297,770
4.7	LiDAR /GPR	1.0	LS		\$ 46,720	\$ 31,146	\$ -	\$ 46,720	\$ 31,146	\$ 77,866
4.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 109,013	\$ 72,675	\$ -	\$ 109,013	\$ 72,675	\$ 181,688
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 259,554		\$ -	\$ 259,554	\$ -	\$ 259,554
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 77,866		\$ -	\$ 77,866	\$ -	\$ 77,866
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 1,500	\$ -	\$ -	\$ 1,500	\$ 1,500
4.16	Legal Fees (Real estate)	1.00	LS		-	45.00	\$ -	\$ -	\$ 45	\$ 45
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 920,000	\$ -	\$ -	\$ 920,000	\$ 920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 10,899,887.91			\$ 967,910	\$ -	\$ -	\$ 967,910
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 25,955	\$ -	\$ -	\$ 25,955	\$ 25,955
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,227,464	\$ 4,345,372	\$ 1,356,072	\$ 6,928,909

NEXtera Energy- TO42 Core 7	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO42 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.”
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided by the developer.
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable, it is subject to change when the info is provided.
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 3 circuits, 2 cable per circuit, so there are 6 passes.
42	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
43	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
44	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
45	Substation pad is based on 8" base and 6" surfacing rock.
46	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
47	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
48	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
49	Assume concrete cantilever retaining wall for Sprain Brook expansion, the assumed dimension details please see the tab
50	Assume 70% rock for Sprain brook 345kV expansion excavation
51	Assume 90% rock for new Sprain brook HVDC yard excavation

<u>NEXtera Energy- TO43 Enhanced 1</u>
REVISION: 1

<i>NEXtera Energy- TO43 Enhanced 1 -DIRECT COST</i>		
<i>Substation Direct Costs</i>		<i>Total Each Segment</i>
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 71,756,341
Direct Labor, Material & Equipment Costs	2.Station 31 East Garden City 345/138 kV Substation Upgrades	\$ 171,119,189
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,095,138
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 327,109,351
Direct Labor, Material & Equipment Costs	12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$ 316,467,326
Direct Labor, Material & Equipment Costs	13- Station 30a New Northport HVDC 1200MW Converter Station	\$ 316,424,093
Direct Labor, Material & Equipment Costs	14 - Northport 138kV GIS Substation	\$ 25,174,983
Direct Labor, Material & Equipment Costs	15.Pilgrim 138kV Substation Upgrades	\$ 2,004,218
Direct Labor, Material & Equipment Costs	16. - Comp 155 Buchanan 1200 MW HVDC Converter Substation	\$ 305,337,800
Direct Labor, Material & Equipment Costs	17. Farragut 345kV Substation Expansion	\$ 73,376,547
Direct Labor, Material & Equipment Costs	18- New Barrett HVDC 1200MW Converter Station	\$ 304,499,815
Direct Labor, Material & Equipment Costs	19.Holbrook 138kV Substation Upgrades	\$ 2,315,867
Direct Labor, Material & Equipment Costs	20. Existing Ruland Road 138 kV Substation Upgrades	\$ 1,077,395
Direct Labor, Material & Equipment Costs	21. Existing East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 2,181,975,310
CONTRACTOR MARK-UP (OH&P)		\$ 230,270,756
SUBTOTAL (AFTER MU):		\$ 2,412,246,066
CONTINGENCY ON ENTIRE PROJECT		\$ 482,449,213
Substation TOTAL:		\$ 2,894,695,280

Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 195,310,866
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$ 89,348,530
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 424,887,357
Direct Labor, Material & Equipment Costs	Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-SprainBrook 320KV DC	\$ 302,256,116
Direct Labor, Material & Equipment Costs	Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)	\$ 217,033,473
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit (Pilgram to Northport kV)	\$ 93,067,293
Direct Labor, Material & Equipment Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit (EGC-Farragut 345kv)	\$ 131,952,439
Direct Labor, Material & Equipment Costs	Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit (EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$ 235,289,469
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 7,755,000
Direct Labor, Material & Equipment Costs	Comp 121 - Barrett To Barrett Landing Onshore 320kV DC UG Cables - Single circuit (New Barrett HVDC-New Buchana HVDC 320KV)	\$ 40,188,289
Direct Labor, Material & Equipment Costs	Comp 70. Barrett Landing-Buchanan Landing 320kV DC Offshore Submarine Cables - Single circuit (New Barrett HVDC-New Buchana HVDC 320KV)	\$ 826,376,642
Direct Labor, Material & Equipment Costs	Comp 91 - Buchanan Landing To Buchanan Onshore 320kV DC UG Cables - Single circuit (New Barrett HVDC-New Buchana HVDC 320KV)	\$ 16,575,622
Direct Labor, Material & Equipment Costs	Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit Farragut-Sprain Brook 345KV	\$ 40,719,017
Direct Labor, Material & Equipment Costs	Comp 87. Farragut to Sprain Brook Landing 345kV Offshore Submarine Cables - Single circuit Farragut-Sprain Brook 345KV	\$ 333,202,969
Direct Labor, Material & Equipment Costs	Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit (Holbrook -Pilgrim 138kv)	\$ 133,775,420
SUBTOTAL (Costs):		\$ 3,719,040,879
CONTRACTOR MARK-UP (OH&P)		\$ 669,427,358
SUBTOTAL (AFTER MU):		\$ 4,388,468,238
CONTINGENCY ON ENTIRE PROJECT		\$ 877,693,648
Transmission Line TOTAL:		\$ 5,266,161,885
NEXTera Energy- TO43 Enhanced 1Total Direct Cost		\$ 8,160,857,165

NEXtera Energy- TO43 Enhanced 1 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 21,452,240
Indirect Costs	2.Station 31 East Garden City 345/138 kV Substation Upgrades	\$ 80,189,183
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 334,752
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 100,658,159
Indirect Costs	12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$ 35,329,140
Indirect Costs	13- Station 30a New Northport HVDC 1200MW Converter Station	\$ 30,991,771
Indirect Costs	14 - Northport 138kV GIS Substation	\$ 4,620,516
Indirect Costs	15.Pilgrim 138kV Substation Upgrades	\$ 630,946
Indirect Costs	16. - Comp 155 Buchanan 1200 MW HVDC Converter Substation	\$ 26,319,158
Indirect Costs	17. Farragut 345kV Substation Expansion	\$ 20,640,926
Indirect Costs	18- New Barrett HVDC 1200MW Converter Station	\$ 35,704,050
Indirect Costs	19.Holbrook 138kV Substation Upgrades	\$ 721,068
Indirect Costs	20. Existing Ruland Road 138 kV Substation Upgrades	\$ 356,246
Indirect Costs	21. Existing East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 435,084,445
CONTRACTOR MARK-UP (OH&P)		\$ 78,315,200
SUBTOTAL (AFTER MU):		\$ 513,399,645
CONTINGENCY ON ENTIRE PROJECT		\$ 102,679,929
Substation TOTAL:		\$ 616,079,574

Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kv)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits (EGC To Sprain Brook 345 kv / Ruland To Sprain Brook 345 kv)	\$ 49,373,632
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kv DC)	\$ 23,027,188
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV	\$ 101,825,530
Indirect Costs	Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-SprainBrook 320KV DC	\$ 71,261,605
Indirect Costs	Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kv / EGC To Dunwoodie 345 kv)	\$ 55,307,165
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kv)	\$ 50,420,274
Indirect Costs	Comp 10A - East Graden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuld: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit (Pilgram to Northport kv)	\$ 23,919,365
Indirect Costs	Comp 13A - Syosset - Oakwood 138 kv Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 13B - Syosset - Greenlawn 138 kv Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 249 - Jamaica To Farragut 345kV Onshore UG Cables -Single circuit (EGC-Farragut 345kv)	\$ 34,205,384
Indirect Costs	Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit (EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$ 59,676,335
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kv #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,514,917
Indirect Costs	Comp 121 - Barrett To Barrett Landing Onshore 320kV DC UG Cables - Single circuit (New Barrett HVDC-New Buchana HVDC 320KV)	\$ 10,701,125
Indirect Costs	Comp 70. Barrett Landing-Buchanan Landing 320kV DC Offshore Submarine Cables - Single circuit (New Barrett HVDC-New Buchana HVDC 320KV)	\$ 173,090,031
Indirect Costs	Comp 91 - Buchanan Landing To Buchanan Onshore 320kV DC UG Cables - Single circuit (New Barrett HVDC-New Buchana HVDC 320KV)	\$ 4,568,212
Indirect Costs	Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit Farragut-Sprain Brook 345KV	\$ 10,573,404
Indirect Costs	Comp 87. Farragut to Sprain Brook Landing 345kV Offshore Submarine Cables - Single circuit Farragut-Sprain Brook 345KV	\$ 82,714,345
Indirect Costs	Comp 210 - Holbrook -Pilgrim 138 kv Onshore UG Cables -Single circuit (Holbrook -Pilgrim 138kv)	\$ 34,851,505
SUBTOTAL (Costs):		\$ 899,958,804
CONTRACTOR MARK-UP (OH&P)		\$ 161,992,585
SUBTOTAL (AFTER MU):		\$ 1,061,951,389
CONTINGENCY ON ENTIRE PROJECT		\$ 212,390,278
Transmission Line TOTAL:		\$ 1,274,341,667
NEXtera Energy- TO43 Enhanced 1 Total Indirect Cost		\$ 1,890,421,241
NEXtera Energy- TO43 Enhanced 1 Total		\$ 10,051,278,406

NEXtera Energy- TO43 Enhanced 1

1. Station 29 New Ruland Road 345/138 kV Substation

Total: \$ 130,328,792

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,525,983	\$ 1,300,112	\$ 762,874	\$ 3,588,968
2. SUBSTATION FOUNDATIONS	\$ 2,268,952	\$ 2,565,809	\$ 1,604,887	\$ 6,439,648
3. SUBSTATION STRUCTURES	\$ 1,003,878	\$ 883,987	\$ 531,389	\$ 2,419,254
4. MAJOR EQUIPMENT	\$ 33,974,138	\$ 6,680,324	\$ 4,252,876	\$ 44,907,338
5. LOW VOLTAGE & CONTROL CABLE	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH	\$ 3,830,653	\$ 2,117,722	\$ 1,141,383	\$ 7,089,758
7. GROUND GRID	\$ 197,725	\$ 142,339	\$ 33,060	\$ 373,123
8. CONTROL ENCLOSURE	\$ 3,191,085	\$ 2,611,419	\$ 973,666	\$ 6,776,170
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,660,765	\$ 12,690,935	\$ 4,100,541	\$ 21,452,240
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 45,030,551	\$ 25,578,737	\$ 11,109,293	\$ 81,718,582
SUBTOTAL (Costs):	\$ 50,775,551	\$ 29,025,737	\$ 13,407,293	\$ 93,208,582
CONTRACTOR MARK-UP (OH&P)	\$ 8,450,199	\$ 4,810,993	\$ 2,137,553	\$ 15,398,745
SUBTOTAL:	\$ 59,225,750	\$ 33,836,730	\$ 15,544,846	\$ 108,607,326
CONTINGENCY ON ENTIRE PROJECT	\$ 11,845,150	\$ 6,767,346	\$ 3,108,969	\$ 21,721,465
TOTAL:	\$ 71,070,900	\$ 40,604,076	\$ 18,653,815	\$ 130,328,792

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1. Station 29 New Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 48,600	\$ 32,400	\$ 81,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,895	SY	4.85	7.20	4.80	\$ 18,890	\$ 28,042	\$ 18,695	\$ 65,627
1.4	Strip and Dispose Top Soil	7,260	CY		24.50	10.50	\$ -	\$ 177,870	\$ 76,230	\$ 254,100
1.5	Site Grading- Excavation for Substation Pad	21,780	CY		9.00	6.00	\$ -	\$ 196,020	\$ 130,680	\$ 326,700
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	11,761	CY		21.00	9.00	\$ -	\$ 246,985.20	\$ 105,850.80	\$ 352,836.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	17,642	CY		2.40	1.60	\$ -	\$ 42,340	\$ 28,227	\$ 70,567
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	11,761	CY	25.00	2.40	1.60	\$ 294,030	\$ 28,227	\$ 18,818	\$ 341,075
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,710	LF	13.85	13.85	6.92	\$ 23,680	\$ 23,680	\$ 11,840	\$ 59,200
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	15,000	SF	1.50	1.50	1.00	\$ 22,500	\$ 22,500	\$ 15,000	\$ 60,000
1.17	Erosion Control-Silt fence install & remove	2,700	LF	2.41	3.16	0.72	\$ 6,507	\$ 8,532	\$ 1,944	\$ 16,983
1.18	Temporary fencing	1,800	LF	7.50	5.25	2.25	\$ 13,500	\$ 9,450	\$ 4,050	\$ 27,000
1.19	Substation entrance with asphalt	4,500	SY	19.50	26.00	19.50	\$ 87,750	\$ 117,000	\$ 87,750	\$ 292,500
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,525,983	\$ 1,300,112	\$ 762,874	\$ 3,588,968

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	127	CY	703.89	804.44	502.78	\$ 89,196	\$ 101,939	\$ 63,712	\$ 254,847
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	230	CY	703.89	804.44	502.78	\$ 161,668	\$ 184,764	\$ 115,477	\$ 461,909
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
=3*3	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
11	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.31	Precast Firewall for transformer, PARs, reactors	2,010	SF	25.00	15.00	10.00	\$ 50,250	\$ 30,150	\$ 20,100	\$ 100,500
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
							\$ 2,268,952	\$ 2,565,809	\$ 1,604,887	\$ 6,439,648
TOTAL - 345KV FOUNDATION										
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	29	EA	4,810.00	2,886.00	1,924.00	\$ 139,490	\$ 83,694	\$ 55,796	\$ 278,980
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	8	EA	19,240.00	11,544.00	7,696.00	\$ 153,920	\$ 92,352	\$ 61,568	\$ 307,840
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus Tubing, 5" SCH 80	1,950	LF	25.00	184.94	123.29	\$ 48,750	\$ 360,629	\$ 240,419	\$ 649,799
3.23	AL Bus fittings	1	LS	58,500.00	58,500.00	29,250.00	\$ 58,500	\$ 58,500	\$ 29,250	\$ 146,250
3.24	Steel grating and support beams-transformer moat	173,120	LB	2.73	1.17	0.50	\$ 472,932	\$ 202,377	\$ 86,733	\$ 762,043
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,003,878	\$ 883,987	\$ 531,389	\$ 2,419,254
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA	-	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	8	EA	57,720.00	34,632.00	23,088.00	\$ 461,760	\$ 277,056	\$ 184,704	\$ 923,520
4.6	345/138KV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.7	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	12,882,000.00	3,520.00	880.00	\$ 12,882,000	\$ 3,520	\$ 880	\$ 12,886,400
4.10	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.12	345kV, Circuit Breaker (PASS)	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.19	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 33,974,138	\$ 6,680,324	\$ 4,252,876	\$ 44,907,338
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	23,100	LF	5.30	1.43	0.29	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,500	LF	11.15	10.80	5.40	\$ 50,175	\$ 48,600	\$ 24,300	\$ 123,075
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.11	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.12	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,830,653	\$ 2,117,722	\$ 1,141,383	\$ 7,089,758
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	20,055	LF	2.09	3.42	1.46	\$ 41,935	\$ 68,494	\$ 29,355	\$ 139,783
7.2	Caweld, DSA, 4/0 , T, CROSS	540	EA	165.00	75.00		\$ 89,100	\$ 40,500	\$ -	\$ 129,600
7.3	Ground Rod, 3/4" x 15'	494	EA	135.00	67.50	7.50	\$ 66,690	\$ 33,345	\$ 3,705	\$ 103,740
TOTAL - GROUND GRID							\$ 197,725	\$ 142,339	\$ 33,060	\$ 373,123
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.15	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,191,085	\$ 2,611,419	\$ 973,666	\$ 6,776,170
1. Station 29 New Ruland Road 345/138 kV Substation							\$ 46,114,786	\$ 16,334,802	\$ 9,306,753	\$ 71,756,341

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		696,379.43	298,448.33	\$ -	\$ 696,379	\$ 298,448	\$ 994,828
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,410,653.65		\$ -	\$ 2,410,654	\$ -	\$ 2,410,654
9.4	Utility PM and Project Oversight	1	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.5	Site Accommodation, Facilities, Storage	1	LS	602,663.41			\$ 602,663	\$ -	\$ -	\$ 602,663
	Engineering									
9.6	Design Engineering	1.00	LS		4,821,307.30		\$ -	\$ 4,821,307	\$ -	\$ 4,821,307
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		421,864.39		\$ -	\$ 421,864	\$ -	\$ 421,864
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,259,987.80		\$ -	\$ 2,259,988	\$ -	\$ 2,259,988
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		180,799.02		\$ -	\$ 180,799	\$ -	\$ 180,799
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,600,000	\$ -	\$ -	\$ 2,600,000	\$ 2,600,000
9.20	Sales Tax on Materials	8.80%	LS	46,114,786.29			\$ 4,058,101	\$ -	\$ -	\$ 4,058,101
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		71,756.34		\$ -	\$ 71,756	\$ -	\$ 71,756
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,660,765	\$ 12,690,935	\$ 4,100,541	\$ 21,452,240

NEXTera Energy- TO43 Enhanced 1

2.Station 31 East Garden City 345/138 kV Substation Upgrades

Total: \$ 350,780,975

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 31 East Garden City 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS	\$ 6,323,828	\$ 6,833,118	\$ 4,288,849	\$ 17,445,796
3. SUBSTATION STRUCTURES	\$ 2,258,419	\$ 1,707,045	\$ 978,475	\$ 4,943,939
4. MAJOR EQUIPTMENT	\$ 86,834,800	\$ 16,960,872	\$ 11,178,648	\$ 114,974,320
5. LOW VOLTAGE & CONTROL CABLE	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
6. CONDUIT & CABLE TRENCH	\$ 8,749,796	\$ 4,973,297	\$ 2,721,841	\$ 16,444,934
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE	\$ 5,916,040	\$ 4,481,372	\$ 1,683,668	\$ 12,081,080
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,206,253	\$ 29,104,053	\$ 39,878,877	\$ 80,189,183
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 105,496,942	\$ 55,633,327	\$ 54,958,103	\$ 216,088,372
SUBTOTAL (Costs):	\$ 123,106,942	\$ 66,199,327	\$ 62,002,103	\$ 251,308,372
CONTRACTOR MARK-UP (OH&P)	\$ 20,046,050	\$ 10,647,959	\$ 10,315,099	\$ 41,009,107
SUBTOTAL:	\$ 143,152,991	\$ 76,847,286	\$ 72,317,202	\$ 292,317,479
CONTINGENCY ON ENTIRE PROJECT	\$ 28,630,598	\$ 15,369,457	\$ 14,463,440	\$ 58,463,496
TOTAL:	\$ 171,783,590	\$ 92,216,743	\$ 86,780,642	\$ 350,780,975

Description of Work: New East Garden City 345 kV/138 kV GIS Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 31 East Garden City 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.4	345kV, Bus support-3 Ph, low	332	CY	703.89	804.44	502.78	\$ 233,549	\$ 266,913	\$ 166,821	\$ 667,283
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	277	CY	703.89	804.44	502.78	\$ 195,117	\$ 222,991	\$ 139,369	\$ 557,477
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	107	CY	703.89	804.44	502.78	\$ 75,316	\$ 86,075	\$ 53,797	\$ 215,188
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.14	345kV, Shunt Reactor with oil containment-150MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.17	345kV, Phase Angle Regulator with oil containment	1,780	CY	703.89	804.44	502.78	\$ 1,252,915	\$ 1,431,903	\$ 894,940	\$ 3,579,758
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.21	345kV, Surge arrester	161	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	1,917	CY	703.89	804.44	502.78	\$ 1,349,094	\$ 1,541,822	\$ 963,639	\$ 3,854,555
2.31	Precast Firewall for transformer, PARs, reactors	29,040	SF	25.00	15.00	10.00	\$ 726,000	\$ 435,600	\$ 290,400	\$ 1,452,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 6,323,828	\$ 6,833,118	\$ 4,288,849	\$ 17,445,796
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.4	345kV, Bus support-3 Ph, low	30	EA	8,346.00	5,758.74	3,839.16	\$ 250,380	\$ 172,762	\$ 115,175	\$ 538,317
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	21	EA	8,346.00	5,758.74	3,839.16	\$ 175,266	\$ 120,934	\$ 80,622	\$ 376,822
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	3,000	LF	25.00	184.94	123.29	\$ 75,000	\$ 554,814	\$ 369,876	\$ 999,690
3.22	AL. Bus fittings	1	LS	90,000.00	90,000.00	45,000.00	\$ 90,000	\$ 90,000	\$ 45,000	\$ 225,000
3.23	Steel grating and support beams-transformer moat	519,360	LB	2.73	1.17	0.50	\$ 1,418,797	\$ 607,132	\$ 260,199	\$ 2,286,128
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 2,258,419	\$ 1,707,045	\$ 978,475	\$ 4,943,939
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	21	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	30	EA	17,400.00	5,460.00	2,340.00	\$ 522,000	\$ 163,800	\$ 70,200	\$ 756,000
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.8	345kV, Shunt Reactor with oil containment-225MVAR	2	EA	3,026,425.00	3,520.00	880.00	\$ 6,052,850	\$ 7,040	\$ 1,760	\$ 6,061,650
4.9	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00				
4.10	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.11	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.12	Transport & Testing- Shunt Reactor	8	EA		424,900.00	279,600.00	\$ -	\$ 3,399,200	\$ 2,236,800	\$ 5,636,000
4.13	345kV, Phase Angle Regulator with oil containment	4	EA	12,882,000.00	3,520.00	880.00	\$ 51,528,000	\$ 14,080	\$ 3,520	\$ 51,545,600
4.14	Transport & Testing- PAR	4	EA		615,400.00	406,600.00	\$ -	\$ 2,461,600	\$ 1,626,400	\$ 4,088,000
4.15	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.20	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 86,834,800	\$ 16,960,872	\$ 11,178,648	\$ 114,974,320
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	27,600	LF	5.30	1.43	0.29	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,700	LF	11.15	10.80	5.40	\$ 63,555	\$ 61,560	\$ 30,780	\$ 155,895
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,749,796	\$ 4,973,297	\$ 2,721,841	\$ 16,444,934
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0 , T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.4	Backup Line Relays (87L): GE L90	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	11	EA	21,328.12	17,062.49	4,265.62	\$ 234,609	\$ 187,687	\$ 46,922	\$ 469,219
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	11	EA	21,328.12	17,062.49	4,265.62	\$ 234,609	\$ 187,687	\$ 46,922	\$ 469,219
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.22	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.23	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,916,040	\$ 4,481,372	\$ 1,683,668	\$ 12,081,080
2.Station 31 East Garden City 345/138 kV Substation Upgrades							\$ 111,900,689	\$ 37,095,274	\$ 22,123,226	\$ 171,119,189
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,072,647.49	888,277.49	\$ -	\$ 2,072,647	\$ 888,277	\$ 2,960,925
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,358,991.89		\$ -	\$ 1,358,992	\$ -	\$ 1,358,992
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		5,435,967.56		\$ -	\$ 5,435,968	\$ -	\$ 5,435,968
9.4	Utility PM and Project Oversight	1	LS		1,358,991.89		\$ -	\$ 1,358,992	\$ -	\$ 1,358,992
9.5	Site Accommodation, Facilities, Storage	1	LS	1,358,991.89			\$ 1,358,992	\$ -	\$ -	\$ 1,358,992
	Engineering									
9.6	Design Engineering	1.00	LS		10,871,935.11		\$ -	\$ 10,871,935	\$ -	\$ 10,871,935
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		951,294.32		\$ -	\$ 951,294	\$ -	\$ 951,294
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		5,096,219.58		\$ -	\$ 5,096,220	\$ -	\$ 5,096,220
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,358,991.89		\$ -	\$ 1,358,992	\$ -	\$ 1,358,992
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		407,697.57		\$ -	\$ 407,698	\$ -	\$ 407,698
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 7,000,000	\$ -	\$ -	\$ 7,000,000	\$ 7,000,000
9.20	Sales Tax on Materials	8.80%	LS	111,900,689.28			\$ 9,847,261	\$ -	\$ -	\$ 9,847,261
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		171,119.19		\$ -	\$ 171,119	\$ -	\$ 171,119
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,206,253	\$ 29,104,053	\$ 39,878,877	\$ 80,189,183

NEXTera Energy- TO43 Enhanced 1

3.Station 48 Valley Stream 345/138 kV Substation Upgrades

Total: \$ 143,522,216

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.Station 48 Valley Stream 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	620,000.00	415,000.00	\$ -	\$ 620,000	\$ 415,000	\$ 1,035,000
1.3	New Access Road - 20'	889	SY	4.85	7.20	4.80	\$ 4,312	\$ 6,401	\$ 4,267	\$ 14,980
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	11,761	CY		9.00	6.00	\$ -	\$ 105,849	\$ 70,566	\$ 176,415
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,057	CY		2.40	1.60	\$ -	\$ 16,937	\$ 11,291	\$ 28,228
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,704	CY	25.00	2.40	1.60	\$ 117,600	\$ 11,290	\$ 7,526	\$ 136,416
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,712	SY	11.00	6.00	4.00	\$ 95,832	\$ 52,272	\$ 34,848	\$ 182,952
1.11	Site Surfacing - Aggregate 6" Thick	8,712	SY	16.50	4.50	3.00	\$ 143,748	\$ 39,204	\$ 26,136	\$ 209,088
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,222	LF	13.85	13.85	6.92	\$ 30,770	\$ 30,770	\$ 15,385	\$ 76,926
1.13	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
1.14	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,583	LF	2.41	3.16	0.72	\$ 6,225	\$ 8,162	\$ 1,860	\$ 16,247
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	333	SY	19.50	26.00	19.50	\$ 6,500	\$ 8,667	\$ 6,500	\$ 21,667
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

NEXTera Energy- TO43 Enhanced 1

4.Barrett 138 kV Substation Upgrades

Total: Total: \$ 77,248,534

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
4.Barrett 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS	\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES	\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT	\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID	\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE	\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 22,313,583	\$ 13,117,388	\$ 8,801,554	\$ 44,232,524
SUBTOTAL (Costs):	\$ 28,058,583	\$ 16,564,388	\$ 11,099,554	\$ 55,722,524
CONTRACTOR MARK-UP (OH&P)	\$ 4,361,145	\$ 2,567,950	\$ 1,722,160	\$ 8,651,254
SUBTOTAL:	\$ 32,419,728	\$ 19,132,338	\$ 12,821,713	\$ 64,373,779
CONTINGENCY ON ENTIRE PROJECT	\$ 6,483,946	\$ 3,826,468	\$ 2,564,343	\$ 12,874,756
TOTAL:	\$ 38,903,673	\$ 22,958,805	\$ 15,386,056	\$ 77,248,534

Description of Work: Construct a new Barrett 138kV GIS substation adjacent to the existing Barrett 138kV substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 23,760	\$ 15,840	\$ 39,600
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,115	SY	4.85	7.20	4.80	\$ 10,257	\$ 15,227	\$ 10,151	\$ 35,636
1.4	Strip and Dispose Top Soil	3,549	CY		24.50	10.50	\$ -	\$ 86,959	\$ 37,268	\$ 124,227
1.5	Site Grading- Excavation for Substation Pad	10,648	CY		9.00	6.00	\$ -	\$ 95,832	\$ 63,888	\$ 159,720
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	5,750	CY		21.00	9.00	\$ -	\$ 120,748.32	\$ 51,749.28	\$ 172,497.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	8,625	CY		2.40	1.60	\$ -	\$ 20,700	\$ 13,800	\$ 34,500
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	5,750	CY	25.00	2.40	1.60	\$ 143,748	\$ 13,800	\$ 9,200	\$ 166,748
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	10,648	SY	11.00	6.00	4.00	\$ 117,128	\$ 63,888	\$ 42,592	\$ 223,608
1.11	Site Surfacing - Aggregate 6" Thick	10,648	SY	16.50	4.50	3.00	\$ 175,692	\$ 47,916	\$ 31,944	\$ 255,552
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,056	LF	13.85	13.85	6.92	\$ 14,623	\$ 14,623	\$ 7,312	\$ 36,559
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	8,896	SF	1.50	1.50	1.00	\$ 13,344	\$ 13,344	\$ 8,896	\$ 35,584
1.17	Erosion Control-Silt fence install & remove	1,620	LF	2.41	3.16	0.72	\$ 3,904	\$ 5,119	\$ 1,166	\$ 10,190
1.18	Temporary fencing	1,080	LF	7.50	5.25	2.25	\$ 8,100	\$ 5,670	\$ 2,430	\$ 16,200
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL. Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7				-	-	-	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.4	Backup Line Relays (87L): GE L90	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LIDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

<u>NEXtera Energy- TO43 Enhanced 1</u>	
<u>5.Dunwoodie 345 kV GIS Substation</u>	
Total:	\$ 64,677,743

<u>NEXtera Energy- TO43 Enhanced 1</u>	
<u>5.Dunwoodie 345 kV GIS Substation</u>	
Total:	\$ 64,677,743

<u>NEXtera Energy- TO43 Enhanced 1</u>	
<u>5.Dunwoodie 345 kV GIS Substation</u>	
Total:	\$ 64,677,743

NEXtera Energy- TO43 Enhanced 1

5.Dunwoodie 345 kV GIS Substation

Total: \$ 64,677,743

<i>NEXtera Energy- TO43 Enhanced 1</i>				
	<i>Material Supply</i>	<i>Labor Supply</i>	<i>Equip Supply</i>	<i>Total</i>
5.Dunwoodie 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS	\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPTMENT	\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID	\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE	\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 11,599,927	\$ 9,176,864	\$ 6,637,039	\$ 27,413,830
SUBTOTAL (Costs):	\$ 21,764,927	\$ 15,275,864	\$ 10,703,039	\$ 47,743,830
CONTRACTOR MARK-UP (OH&P)	\$ 2,697,887	\$ 2,017,775	\$ 1,438,627	\$ 6,154,289
SUBTOTAL:	\$ 24,462,814	\$ 17,293,639	\$ 12,141,665	\$ 53,898,119
CONTINGENCY ON ENTIRE PROJECT	\$ 4,892,563	\$ 3,458,728	\$ 2,428,333	\$ 10,779,624
TOTAL:	\$ 29,355,377	\$ 20,752,367	\$ 14,569,999	\$ 64,677,743

<p>Description of Work: Construct a new Dunwoodie 345kV GIS substation. Loop in the Pleasantville (2) and Sprain Brook lines and connect back to the existing Dunwoodie 345kV substation.</p>
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Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5.Dunwoodie 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 17,137	\$ 11,425	\$ 28,562
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,263	SY	4.85	7.20	4.80	\$ 6,124	\$ 9,092	\$ 6,061	\$ 21,278
1.4	Strip and Dispose Top Soil	2,560	CY		24.50	10.50	\$ -	\$ 62,720	\$ 26,880	\$ 89,600
1.5	Site Grading- Excavation for Substation Pad	7,680	CY		9.00	6.00	\$ -	\$ 69,120	\$ 46,080	\$ 115,200
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	4,147	CY		21.00	9.00	\$ -	\$ 87,091.20	\$ 37,324.80	\$ 124,416.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	6,221	CY		2.40	1.60	\$ -	\$ 14,930	\$ 9,953	\$ 24,883
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,147	CY	25.00	2.40	1.60	\$ 103,680	\$ 9,953	\$ 6,636	\$ 120,269
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	7,680	SY	11.00	6.00	4.00	\$ 84,480	\$ 46,080	\$ 30,720	\$ 161,280
1.11	Site Surfacing - Aggregate 6" Thick	7,680	SY	16.50	4.50	3.00	\$ 126,720	\$ 34,560	\$ 23,040	\$ 184,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	864	LF	13.85	13.85	6.92	\$ 11,965	\$ 11,965	\$ 5,982	\$ 29,912
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	325,073.45	83,781.82	55,348.36	\$ 325,073	\$ 83,782	\$ 55,348	\$ 464,204
1.16	Seeding	7,296	SF	1.50	1.50	1.00	\$ 10,944	\$ 10,944	\$ 7,296	\$ 29,184
1.17	Erosion Control-Silt fence install & remove	2,100	LF	2.41	3.16	0.72	\$ 5,061	\$ 6,636	\$ 1,512	\$ 13,209
1.18	Temporary fencing	1,400	LF	7.50	5.25	2.25	\$ 10,500	\$ 7,350	\$ 3,150	\$ 21,000
1.19	Substation entrance with asphalt	486	SY	19.50	26.00	19.50	\$ 9,479	\$ 12,639	\$ 9,479	\$ 31,597
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
4.28	Transport & Testing- GIL	0	LS		-	-				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
5.Dunwoodie 345 kV GIS Substation							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931
9.4	Utility PM and Project Oversight	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733
	Engineering									
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565

6.Elwood 138 kV Substation Upgrades

Total: \$ 7,946,839

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT	\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563
SUBTOTAL (Costs):	\$ 3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$ 692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$ 4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$ 908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$ 5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVAR reactor (1 block) at the exisitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVAR)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 8,137	\$ 9,299	\$ 5,812	\$ 23,248
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345/138kV Gas-Insulated Bus Conductor	246	LF	550.00	275.00	82.50	\$ 135,300	\$ 67,650	\$ 20,295	\$ 223,245
4.30	345/138kV Gas-Insulated Bus Conductor-elbow	6	EA	2,500.00	1,250.00	375.00	\$ 15,000	\$ 7,500	\$ 2,250	\$ 24,750
4.31	Transport & Testing- GIL	1	LS		27,054.00	18,036.00	\$ -	\$ 27,054	\$ 18,036	\$ 45,090
TOTAL - MAJOR EQUIPMENT							\$ 385,838	\$ 168,494	\$ 68,991	\$ 623,323
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
7.Jamaica 138 kV Substation Upgrades							\$ 595,020	\$ 355,092	\$ 145,026	\$ 1,095,138
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		17,504.13	7,501.77	\$ -	\$ 17,504	\$ 7,502	\$ 25,006
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,805.51		\$ -	\$ 43,806	\$ -	\$ 43,806

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.4	Utility PM and Project Oversight	1	LS		10,951.38		\$ -	\$ 10,951	\$ -	\$ 10,951
9.5	Site Accommodation, Facilities, Storage	1	LS	10,951.38			\$ 10,951	\$ -	\$ -	\$ 10,951
	Engineering									
9.6	Design Engineering	1.00	LS		87,611.01		\$ -	\$ 87,611	\$ -	\$ 87,611
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,665.96		\$ -	\$ 7,666	\$ -	\$ 7,666
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		41,067.66		\$ -	\$ 41,068	\$ -	\$ 41,068
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		10,951.38		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,285.41		\$ -	\$ 3,285	\$ -	\$ 3,285
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	595,019.53			\$ 52,362	\$ -	\$ -	\$ 52,362
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,095.14		\$ -	\$ 1,095	\$ -	\$ 1,095
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 63,313	\$ 223,938	\$ 47,502	\$ 334,752

NEXTera Energy- TO43 Enhanced 1

8.Newbridge 345/138 kV GIS Substation Upgrades

Total: \$ 89,858,233

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION	#REF!									
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annn	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
	Engineering									
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

NEXTera Energy- TO43 Enhanced 1

9.Rainey 345kV GIS Substation Upgrades

Total: \$ 45,946,157

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
9.Rainey 345kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID	\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE	\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 8,610,766	\$ 8,924,115	\$ 5,696,359	\$ 23,231,241
SUBTOTAL (Costs):	\$ 13,740,766	\$ 12,002,115	\$ 7,748,359	\$ 33,491,241
CONTRACTOR MARK-UP (OH&P)	\$ 1,857,738	\$ 1,791,021	\$ 1,148,465	\$ 4,797,223
SUBTOTAL:	\$ 15,598,504	\$ 13,793,136	\$ 8,896,824	\$ 38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$ 3,119,701	\$ 2,758,627	\$ 1,779,365	\$ 7,657,693
TOTAL:	\$ 18,718,205	\$ 16,551,763	\$ 10,676,189	\$ 45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.Rainey 345kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,856	\$ 5,904	\$ 14,760
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	989	SY	4.85	7.20	4.80	\$ 4,796	\$ 7,120	\$ 4,747	\$ 16,663
1.4	Strip and Dispose Top Soil	1,323	CY		24.50	10.50	\$ -	\$ 32,412	\$ 13,891	\$ 46,303
1.5	Site Grading- Excavation for Substation Pad	3,969	CY		9.00	6.00	\$ -	\$ 35,719	\$ 23,813	\$ 59,532
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,143	CY		21.00	9.00	\$ -	\$ 45,006.19	\$ 19,288.37	\$ 64,294.56
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,215	CY		2.40	1.60	\$ -	\$ 7,715	\$ 5,144	\$ 12,859
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,143	CY	25.00	2.40	1.60	\$ 53,579	\$ 5,144	\$ 3,429	\$ 62,151
1.9	Blasting		EA	-	-	-	\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,969	SY	11.00	6.00	4.00	\$ 43,657	\$ 23,813	\$ 15,875	\$ 83,345
1.11	Site Surfacing - Aggregate 6" Thick	3,969	SY	16.50	4.50	3.00	\$ 65,485	\$ 17,860	\$ 11,906	\$ 95,251
1.12	7' Station Fence w/ Barbed Wire & Grounding	726	LF	13.85	13.85	6.92	\$ 10,054	\$ 10,054	\$ 5,027	\$ 25,134
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	109,761.60	38,400.00	25,368.00	\$ 109,762	\$ 38,400	\$ 25,368	\$ 173,530
1.16	Seeding	3,000	SF	1.50	1.50	1.00	\$ 4,500	\$ 4,500	\$ 3,000	\$ 12,000
1.17	Erosion Control-Silt fence install & remove	1,200	LF	2.41	3.16	0.72	\$ 2,892	\$ 3,792	\$ 864	\$ 7,548
1.18	Temporary fencing	800	LF	7.50	5.25	2.25	\$ 6,000	\$ 4,200	\$ 1,800	\$ 12,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"x80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
	Engineering									
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

<u>NEXtera Energy- TO43 Enhanced 1</u>	
<u>10.Shore Road 138kV Substation Upgrades</u>	
Total:	\$ 13,943,860

10.Shore Road 138kV Substation Upgrades	NEXtera Energy- TO43 Enhanced 1				
		Material Supply	Labor Supply	Equip Supply	Total
	1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
	2. SUBSTATION FOUNDATIONS	\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
	3. SUBSTATION STRUCTURES	\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
	4. MAJOR EQUIPMENT	\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
	5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
	6. CONDUIT & CABLE TRENCH	\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
	7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
	8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936	
SUBTOTAL (Costs):	\$ 6,942,247	\$ 2,219,499	\$ 685,612	\$ 9,847,359	
CONTRACTOR MARK-UP (OH&P)	\$ 1,249,604	\$ 399,510	\$ 123,410	\$ 1,772,525	
SUBTOTAL:	\$ 8,191,851	\$ 2,619,009	\$ 809,023	\$ 11,619,883	
CONTINGENCY ON ENTIRE PROJECT	\$ 1,638,370	\$ 523,802	\$ 161,805	\$ 2,323,977	
TOTAL:	\$ 9,830,222	\$ 3,142,811	\$ 970,827	\$ 13,943,860	

Description of Work: Add a new 250 MVAr reactor at the existing Shore Road 138kV station (5 block of 50 MVAr)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 540	\$ 360	\$ 900
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	81	CY		24.50	10.50	\$ -	\$ 1,976	\$ 847	\$ 2,823
1.5	Site Grading- Excavation for Substation Pad	242	CY		9.00	6.00	\$ -	\$ 2,178	\$ 1,452	\$ 3,630
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	131	CY		21.00	9.00	\$ -	\$ 2,744.28	\$ 1,176.12	\$ 3,920.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	196	CY		2.40	1.60	\$ -	\$ 470	\$ 314	\$ 784
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	131	CY	25.00	2.40	1.60	\$ 3,267	\$ 314	\$ 209	\$ 3,790
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	242	SY	11.00	6.00	4.00	\$ 2,662	\$ 1,452	\$ 968	\$ 5,082
1.11	Site Surfacing - Aggregate 6" Thick	242	SY	16.50	4.50	3.00	\$ 3,993	\$ 1,089	\$ 726	\$ 5,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Engineering									
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

<u>NEXtera Energy- TO43 Enhanced 1</u>	
<u>11.Sprain Brook 345kV Substation Expansion</u>	
Total:	\$ 605,718,794

NEXtera Energy- TO43 Enhanced 1

	Material Supply	Labor Supply	Equip Supply	Total
11.Sprain Brook 345kV Substation Expansion				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS	\$ 2,055,398	\$ 2,320,526	\$ 1,451,641	\$ 5,827,565
3. SUBSTATION STRUCTURES	\$ 1,194,199	\$ 952,276	\$ 590,762	\$ 2,737,237
4. MAJOR EQUIPMENT	\$ 14,085,266	\$ 2,251,804	\$ 1,339,748	\$ 17,676,818
5. LOW VOLTAGE & CONTROL CABLE	\$ 252,691	\$ 68,330	\$ 13,666	\$ 334,687
6. CONDUIT & CABLE TRENCH	\$ 638,014	\$ 204,208	\$ 75,352	\$ 917,574
7. GROUND GRID	\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE	\$ 1,382,479	\$ 1,101,238	\$ 392,741	\$ 2,876,458
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,641,345	\$ 74,655,515	\$ 18,361,299	\$ 100,658,159
SUBTOTAL (Costs):	\$ 57,303,295	\$ 206,153,970	\$ 164,310,245	\$ 427,767,510
CONTRACTOR MARK-UP (OH&P)	\$ 10,314,593	\$ 37,107,715	\$ 29,575,844	\$ 76,998,152
SUBTOTAL:	\$ 67,617,888	\$ 243,261,684	\$ 193,886,089	\$ 504,765,661
CONTINGENCY ON ENTIRE PROJECT	\$ 13,523,578	\$ 48,652,337	\$ 38,777,218	\$ 100,953,132
TOTAL:	\$ 81,141,465	\$ 291,914,021	\$ 232,663,307	\$ 605,718,794

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11.Sprain Brook 345kV Substation Expansion										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.4	ACRE	-	42,000.00	28,000.00	\$ -	\$ 224,902	\$ 149,935	\$ 374,837
1.2	Demolition	1	LS	-	120,000.00	80,000.00	\$ -	\$ 120,000	\$ 80,000	\$ 200,000
1.3	New Access Road - 20'	3,631	SY	4.85	7.20	4.80	\$ 17,611	\$ 26,144	\$ 17,429	\$ 61,184
1.4	Strip and Dispose Top Soil	8,639	CY		24.50	10.50	\$ -	\$ 211,658	\$ 90,711	\$ 302,369
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	56,901	CY		9.00	6.00	\$ -	\$ 512,110	\$ 341,407	\$ 853,517
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	227,604	CY		120.00	180.00	\$ -	\$ 27,312,533	\$ 40,968,800	\$ 68,281,333
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	384,083	CY		21.00	9.00	\$ -	\$ 8,065,732.50	\$ 3,456,742.50	\$ 11,522,475
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	11,380	SY	11.00	6.00	4.00	\$ 125,182	\$ 68,281	\$ 45,521	\$ 238,985
1.12	Site Surfacing - Aggregate 6" Thick	11,380	SY	16.50	4.50	3.00	\$ 187,774	\$ 51,211	\$ 34,141	\$ 273,125
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,300	LF	13.85	13.85	6.92	\$ 18,002	\$ 18,002	\$ 9,001	\$ 45,006
1.14	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.15	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	219,523.20	76,800.00	50,736.00	\$ 219,523	\$ 76,800	\$ 50,736	\$ 347,059
1.17	Seeding	130,834	SF	1.50	1.50	1.00	\$ 196,251	\$ 196,251	\$ 130,834	\$ 523,336
1.18	Erosion Control-Silt fence install & remove	3,900	LF	2.41	3.16	0.72	\$ 9,399	\$ 12,324	\$ 2,808	\$ 24,531
1.19	Temporary fencing	1,430	LF	7.50	5.25	2.25	\$ 10,725	\$ 7,508	\$ 3,218	\$ 21,450
1.20	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Concrete Retaining Wall- Soil excavation	99,073	CY		9.00	6.00	\$ -	\$ 891,661	\$ 594,440	\$ 1,486,101
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727
1.26	Concrete Retaining Walll- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	700	CY	703.89	804.44	502.78	\$ 492,720	\$ 563,108	\$ 351,943	\$ 1,407,770
2.15	345kV, Shunt Reactor with oil containment-225MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	180	CY	703.89	804.44	502.78	\$ 126,699	\$ 144,799	\$ 90,500	\$ 361,998
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,055,398	\$ 2,320,526	\$ 1,451,641	\$ 5,827,565
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,194,199	\$ 952,276	\$ 590,762	\$ 2,737,237
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	16	EA	57,720.00	34,632.00	23,088.00	\$ 923,520	\$ 554,112	\$ 369,408	\$ 1,847,040
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	2	EA	3,332,487.50	3,520.00	880.00	\$ 6,664,975	\$ 7,040	\$ 1,760	\$ 6,673,775
4.9	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.10	Transport & Testing- Shunt Reactor	3	EA		357,900.40	234,933.60	\$ -	\$ 1,073,701	\$ 704,801	\$ 1,778,502
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	641,250.00	384,750.00	256,500.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker	9	EA	350,000.00	57,239.00	24,531.00	\$ 3,150,000	\$ 515,151	\$ 220,779	\$ 3,885,930
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,194,419.50	716,651.70	477,767.80	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 14,085,266	\$ 2,251,804	\$ 1,339,748	\$ 17,676,818
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	47,700	LF	5.30	1.43	0.29	\$ 252,691	\$ 68,330	\$ 13,666	\$ 334,687
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 252,691	\$ 68,330	\$ 13,666	\$ 334,687
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	9,000	LF	11.15	10.80	5.40	\$ 100,350	\$ 97,200	\$ 48,600	\$ 246,150
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,018	LF	266.50	53.04	13.26	\$ 537,664	\$ 107,008	\$ 26,752	\$ 671,424
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00				\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00				\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28				\$ -
6.11	345kV UG- Conduit	466	LF	266.73	202.15	100.00				\$ -
6.12	345kV UG- Cable	1,398	LF	167.00	100.20	66.80				\$ -
6.13	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				\$ -
6.14	Fiber Optic Cable	466	LF	7.40	3.33	2.22				\$ -
6.15	Ground Continuity Conductor	466	LF	13.04	7.53	5.02				\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 638,014	\$ 204,208	\$ 75,352	\$ 917,574
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,277	LF	2.09	3.42	1.46	\$ 36,126	\$ 59,006	\$ 25,288	\$ 120,421
7.2	Caweld, DSA, 4/0 , T, CROSS	462	EA	165.00	75.00		\$ 76,230	\$ 34,650	\$ -	\$ 110,880
7.3	Ground Rod, 3/4" x 15'	410	EA	135.00	67.50	7.50	\$ 55,350	\$ 27,675	\$ 3,075	\$ 86,100
TOTAL - GROUND GRID							\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	542,947.99	380,063.60	162,884.40	\$ 542,948	\$ 380,064	\$ 162,884	\$ 1,085,896
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,382,479	\$ 1,101,238	\$ 392,741	\$ 2,876,458
11.Sprain Brook 345kV Substation Expansion							\$ 49,661,950	\$ 131,498,455	\$ 145,948,946	\$ 327,109,351
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,710,659.03	4,161,711.01	\$ -	\$ 9,710,659	\$ 4,161,711	\$ 13,872,370
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,271,093.51		\$ -	\$ 3,271,094	\$ -	\$ 3,271,094
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		13,084,374.02		\$ -	\$ 13,084,374	\$ -	\$ 13,084,374
9.4	Utility PM and Project Oversight	1.00	LS		3,271,093.51		\$ -	\$ 3,271,094	\$ -	\$ 3,271,094
9.5	Site Accommodation, Facilities, Storage	1.00	LS	3,271,093.51			\$ 3,271,094	\$ -	\$ -	\$ 3,271,094
	Engineering									
9.6	Design Engineering	1.00	LS		26,168,748.04		\$ -	\$ 26,168,748	\$ -	\$ 26,168,748
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,289,765.45		\$ -	\$ 2,289,765	\$ -	\$ 2,289,765
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		12,266,600.64		\$ -	\$ 12,266,601	\$ -	\$ 12,266,601
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,271,093.51		\$ -	\$ 3,271,094	\$ -	\$ 3,271,094
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		981,328.05		\$ -	\$ 981,328	\$ -	\$ 981,328
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,029,600.00	\$ -	\$ -	\$ 2,029,600	\$ 2,029,600
9.17	Legal Fees (Real estate)	1.00	LS		-	60,888.00	\$ -	\$ -	\$ 60,888	\$ 60,888
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 12,100,000	\$ -	\$ -	\$ 12,100,000	\$ 12,100,000
9.20	Sales Tax on Materials	8.80%	LS	49,661,949.70			\$ 4,370,252	\$ -	\$ -	\$ 4,370,252
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		327,109.35		\$ -	\$ 327,109	\$ -	\$ 327,109
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,641,345	\$ 74,655,515	\$ 18,361,299	\$ 100,658,159

NEXtera Energy- TO43 Enhanced 1

12 - Station 36a Sprain Brook HVDC 1200MW Converter Station

Total: \$ 454,943,796

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,265,365	\$ 6,143,166	\$ 7,447,195	\$ 15,855,727
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ 238,706	\$ 172,356	\$ 40,224	\$ 451,286
8. CONTROL ENCLOSURE	\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,232,085	\$ 4,074,870	\$ 15,022,185	\$ 35,329,140
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 18,816,313	\$ 10,454,517	\$ 22,525,636	\$ 51,796,466
SUBTOTAL (Costs):	\$ 198,816,313	\$ 70,454,517	\$ 82,525,636	\$ 351,796,466
CONTRACTOR MARK-UP (OH&P)	\$ 14,186,936	\$ 5,481,813	\$ 7,654,615	\$ 27,323,364
SUBTOTAL:	\$ 213,003,249	\$ 75,936,330	\$ 90,180,251	\$ 379,119,830
CONTINGENCY ON ENTIRE PROJECT	\$ 42,600,650	\$ 15,187,266	\$ 18,036,050	\$ 75,823,966
TOTAL:	\$ 255,603,899	\$ 91,123,596	\$ 108,216,301	\$ 454,943,796

Description of Work: Construct a new Sprain Brook 1200MW converter station, with a transition from 320kV DC to 345kV AC and tie into the expanded Sprain Brook 345kV GIS station and the Northport-Sprain Brook HVDC cable.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 105,000	\$ 70,000	\$ 175,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,002	SY	4.85	7.20	4.80	\$ 4,861	\$ 7,216	\$ 4,811	\$ 16,887
1.4	Strip and Dispose Top Soil	8,067	CY		24.50	10.50	\$ -	\$ 197,633	\$ 84,700	\$ 282,333
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	4,033	CY		9.00	6.00	\$ -	\$ 36,300	\$ 24,200	\$ 60,500
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	36,300	CY		120.00	180.00	\$ -	\$ 4,356,000.00	\$ 6,534,000.00	\$ 10,890,000
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	43,560	CY		21.00	9.00	\$ -	\$ 914,760.00	\$ 392,040.00	\$ 1,306,800
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,089	CY		2.40	1.60	\$ -	\$ 2,614	\$ 1,742	\$ 4,356
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	43,560	CY	25.00	2.40	1.60	\$ 1,089,000	\$ 104,544	\$ 69,696	\$ 1,263,240
1.10	Install substation 8" pad base	12,100	SY	11.00	6.00	4.00	\$ 133,100	\$ 72,600	\$ 48,400	\$ 254,100
1.11	Site Surfacing - Aggregate 6" Thick	18,150	SY	16.50	4.50	3.00	\$ 299,475	\$ 81,675	\$ 54,450	\$ 435,600
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,872	LF	13.85	13.85	6.92	\$ 25,923	\$ 25,923	\$ 12,962	\$ 64,809
1.13	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.16	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.17	Erosion Control-Silt fence install & remove	3,089	LF	2.41	3.16	0.72	\$ 7,444	\$ 9,761	\$ 2,224	\$ 19,429
1.18	Temporary fencing	2,059	LF	7.50	5.25	2.25	\$ 15,444	\$ 10,811	\$ 4,633	\$ 30,888
1.19	Substation entrance with asphalt	812	SY	19.50	26.00	19.50	\$ 15,832	\$ 21,109	\$ 15,832	\$ 52,773
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,265,365	\$ 6,143,166	\$ 7,447,195	\$ 15,855,727
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138kV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Building	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA	852,222.22	511,333.33	340,888.89	\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138kV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Conduit	1,001	LF	266.73	202.15	100.00				
6.9	345kV UG- Cable	3,153	LF	167.00	100.20	66.80				
6.10	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				
6.13	Fiber Optic Cable	1,051	LF	7.40	3.33	2.22				
6.14	Ground Continuity Conductor	1,051	LF	13.04	7.53	5.02				
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	24,417	LF	2.09	3.42	1.46	\$ 51,056	\$ 83,391	\$ 35,739	\$ 170,186
7.2	Caweld, DSA, 4/0 , T, CROSS	648	EA	165.00	75.00		\$ 106,920	\$ 48,600	\$ -	\$ 155,520
7.3	Ground Rod, 3/4" x 15'	598	EA	135.00	67.50	7.50	\$ 80,730	\$ 40,365	\$ 4,485	\$ 125,580
TOTAL - GROUND GRID							\$ 238,706	\$ 172,356	\$ 40,224	\$ 451,286
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station							\$ 182,584,228	\$ 66,379,647	\$ 67,503,451	\$ 316,467,326
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		485,908.43	208,246.47	\$ -	\$ 485,908	\$ 208,246	\$ 694,155
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		658,693.03		\$ -	\$ 658,693	\$ -	\$ 658,693
9.4	Utility PM and Project Oversight	1	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.5	Site Accommodation, Facilities, Storage	1	LS	164,673.26			\$ 164,673	\$ -	\$ -	\$ 164,673
	Engineering									
9.6	Design Engineering	1.00	LS		1,317,386.06		\$ -	\$ 1,317,386	\$ -	\$ 1,317,386
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		115,271.28		\$ -	\$ 115,271	\$ -	\$ 115,271
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		617,524.71		\$ -	\$ 617,525	\$ -	\$ 617,525
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		49,401.98		\$ -	\$ 49,402	\$ -	\$ 49,402
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,558,096.00	\$ -	\$ -	\$ 5,558,096	\$ 5,558,096
9.17	Legal Fees (Real estate)	1.00	LS		-	166,742.88	\$ -	\$ -	\$ 166,743	\$ 166,743
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 9,080,000	\$ -	\$ -	\$ 9,080,000	\$ 9,080,000
9.20	Sales Tax on Materials	8.80%	LS	182,584,227.65			\$ 16,067,412	\$ -	\$ -	\$ 16,067,412
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		316,467.33		\$ -	\$ 316,467	\$ -	\$ 316,467
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,232,085	\$ 4,074,870	\$ 15,022,185	\$ 35,329,140

NEXTera Energy- TO43 Enhanced 1

13- Station 30a New Northport HVDC 1200MW Converter Station

Total: \$ 448,740,863

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
13- Station 30a New Northport HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,491,747	\$ 1,285,611	\$ 729,878	\$ 3,507,235
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 6,063,620	\$ 3,718,325	\$ 2,122,341	\$ 11,904,286
7. GROUND GRID	\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE	\$ 293,437	\$ 234,750	\$ 58,687	\$ 586,875
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,714,737	\$ 3,872,639	\$ 10,404,395	\$ 30,991,771
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 24,788,558	\$ 9,273,986	\$ 13,353,320	\$ 47,415,864
SUBTOTAL (Costs):	\$ 204,788,558	\$ 69,273,986	\$ 73,353,320	\$ 347,415,864
CONTRACTOR MARK-UP (OH&P)	\$ 15,261,940	\$ 5,269,317	\$ 6,003,598	\$ 26,534,855
SUBTOTAL:	\$ 220,050,498	\$ 74,543,303	\$ 79,356,918	\$ 373,950,719
CONTINGENCY ON ENTIRE PROJECT	\$ 44,010,100	\$ 14,908,661	\$ 15,871,384	\$ 74,790,144
TOTAL:	\$ 264,060,598	\$ 89,451,964	\$ 95,228,301	\$ 448,740,863

Description of Work: Construct a new Northport 1200MW converter station, with a transition from 320kV DC to 138kV AC and tie into the new Northport 138kV GIS with three 138kV lines.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13- Station 30a New Northport HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 105,000	\$ 70,000	\$ 175,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,200	SY	4.85	7.20	4.80	\$ 10,670	\$ 15,840	\$ 10,560	\$ 37,070
1.4	Strip and Dispose Top Soil	8,067	CY		24.50	10.50	\$ -	\$ 197,633	\$ 84,700	\$ 282,333
1.5	Site Grading- Excavation for Substation Pad	24,200	CY		9.00	6.00	\$ -	\$ 217,800	\$ 145,200	\$ 363,000
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	13,068	CY		21.00	9.00	\$ -	\$ 274,428.00	\$ 117,612.00	\$ 392,040.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	19,602	CY		2.40	1.60	\$ -	\$ 47,045	\$ 31,363	\$ 78,408
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	13,068	CY	25.00	2.40	1.60	\$ 326,700	\$ 31,363	\$ 20,909	\$ 378,972
1.9	Install substation 8" pad base	12,100	SY	11.00	6.00	4.00	\$ 133,100	\$ 72,600	\$ 48,400	\$ 254,100
1.10	Site Surfacing - Aggregate 6" Thick	18,150	SY	16.50	4.50	3.00	\$ 299,475	\$ 81,675	\$ 54,450	\$ 435,600
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,922	LF	13.85	13.85	6.92	\$ 26,616	\$ 26,616	\$ 13,308	\$ 66,540
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.15	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.16	Erosion Control-Silt fence install & remove	3,171	LF	2.41	3.16	0.72	\$ 7,643	\$ 10,021	\$ 2,283	\$ 19,947
1.17	Temporary fencing	2,114	LF	7.50	5.25	2.25	\$ 15,857	\$ 11,100	\$ 4,757	\$ 31,713
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,491,747	\$ 1,285,611	\$ 729,878	\$ 3,507,235
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Building	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	-
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	-
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	7,020	LF	266.73	202.15	100.00	\$ 1,872,451	\$ 1,419,068	\$ 702,034	\$ 3,993,554
6.9	138kV UG- Cable	22,113	LF	145.00	87.00	58.00	\$ 3,206,385	\$ 1,923,831	\$ 1,282,554	\$ 6,412,770
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	7,371	LF	7.40	3.33	2.22	\$ 54,523	\$ 24,550	\$ 16,367	\$ 95,440
6.14	Ground Continuity Conductor	7,371	LF	13.04	7.53	5.02	\$ 96,110	\$ 55,482	\$ 36,988	\$ 188,580
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,063,620	\$ 3,718,325	\$ 2,122,341	\$ 11,904,286
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	23,100	LF	2.09	3.42	1.46	\$ 48,302	\$ 78,893	\$ 33,811	\$ 161,007
7.2	Caweld, DSA, 4/0 , T, CROSS	612	EA	165.00	75.00		\$ 100,980	\$ 45,900	\$ -	\$ 146,880
7.3	Ground Rod, 3/4" x 15'	561	EA	135.00	67.50	7.50	\$ 75,735	\$ 37,868	\$ 4,208	\$ 117,810
TOTAL - GROUND GRID							\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annuncia	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.8	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 293,437	\$ 234,750	\$ 58,687	\$ 586,875
13- Station 30a New Northport HVDC 1200MW Converter Station							\$ 188,073,821	\$ 65,401,347	\$ 62,948,925	\$ 316,424,093
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		292,259.53	125,254.08	\$ -	\$ 292,260	\$ 125,254	\$ 417,514
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		656,963.72		\$ -	\$ 656,964	\$ -	\$ 656,964
9.4	Utility PM and Project Oversight	1	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.5	Site Accommodation, Facilities, Storage	1	LS	164,240.93			\$ 164,241	\$ -	\$ -	\$ 164,241
	Engineering									
9.6	Design Engineering	1.00	LS		1,313,927.44		\$ -	\$ 1,313,927	\$ -	\$ 1,313,927
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		114,968.65		\$ -	\$ 114,969	\$ -	\$ 114,969
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		615,903.49		\$ -	\$ 615,903	\$ -	\$ 615,903
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		49,272.28		\$ -	\$ 49,272	\$ -	\$ 49,272
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,271,884.00	\$ -	\$ -	\$ 1,271,884	\$ 1,271,884
9.17	Legal Fees (Real estate)	1.00	LS		-	38,156.52	\$ -	\$ -	\$ 38,157	\$ 38,157
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 8,960,000	\$ -	\$ -	\$ 8,960,000	\$ 8,960,000
9.20	Sales Tax on Materials	8.80%	LS	188,073,820.71			\$ 16,550,496	\$ -	\$ -	\$ 16,550,496
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		316,424.09		\$ -	\$ 316,424	\$ -	\$ 316,424
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,714,737	\$ 3,872,639	\$ 10,404,395	\$ 30,991,771

NEXTera Energy- TO43 Enhanced 1
14 - Northport 138kV GIS Substation

Total: \$ 40,126,906

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
14 - Northport 138kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 423,784	\$ 299,491	\$ 171,133	\$ 894,409
2. SUBSTATION FOUNDATIONS	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 2,658,505	\$ 1,489,519	\$ 795,356	\$ 4,943,380
7. GROUND GRID	\$ 31,301	\$ 22,409	\$ 5,136	\$ 58,846
8. CONTROL ENCLOSURE	\$ 1,925,705	\$ 1,502,309	\$ 534,896	\$ 3,962,909
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,212,779	\$ 2,378,384	\$ 1,029,353	\$ 4,620,516
Turnkey cost (HVDC, GIS)	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
Non-Turnkey cost	\$ 6,596,977	\$ 6,086,288	\$ 2,782,234	\$ 15,465,499
SUBTOTAL (Costs):	\$ 13,761,977	\$ 10,385,288	\$ 5,648,234	\$ 29,795,499
CONTRACTOR MARK-UP (OH&P)	\$ 1,617,356	\$ 1,353,472	\$ 672,762	\$ 3,643,590
SUBTOTAL:	\$ 15,379,333	\$ 11,738,760	\$ 6,320,996	\$ 33,439,088
CONTINGENCY ON ENTIRE PROJECT	\$ 3,075,867	\$ 2,347,752	\$ 1,264,199	\$ 6,687,818
TOTAL:	\$ 18,455,200	\$ 14,086,511	\$ 7,585,195	\$ 40,126,906

Description of Work: Construct a new Northport 138kV GIS substation adjacent to the existing Northport 138kV substation. Tie the existing Pilgrim-Northport 138kV lines, the new 138kV lines to Northport HVDC station, and the existing Northport 138kV substation into the 138kV breaker-and-a-half bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 - Northport 138kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 20,549	\$ 13,699	\$ 34,249
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,105	SY	4.85	7.20	4.80	\$ 5,361	\$ 7,958	\$ 5,306	\$ 18,625
1.4	Strip and Dispose Top Soil	1,579	CY		24.50	10.50	\$ -	\$ 38,678	\$ 16,576	\$ 55,255
1.5	Site Grading- Excavation for Substation Pad	4,736	CY		9.00	6.00	\$ -	\$ 42,625	\$ 28,417	\$ 71,042
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	2,558	CY		21.00	9.00	\$ -	\$ 53,707.50	\$ 23,017.50	\$ 76,725.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,836	CY		2.40	1.60	\$ -	\$ 9,207	\$ 6,138	\$ 15,345
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,558	CY		2.40	1.60	\$ 63,938	\$ 6,138	\$ 4,092	\$ 74,168
1.9	Install substation 8" pad base	2,368	SY	11.00	6.00	4.00	\$ 26,049	\$ 14,208	\$ 9,472	\$ 49,729
1.10	Site Surfacing - Aggregate 6" Thick	3,552	SY	16.50	4.50	3.00	\$ 58,609	\$ 15,984	\$ 10,656	\$ 85,250
1.11	7' Station Fence w/ Barbed Wire & Grounding	642	LF	13.85	13.85	6.92	\$ 8,890	\$ 8,890	\$ 4,445	\$ 22,226
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	223,488.00	57,600.00	38,052.00	\$ 223,488	\$ 57,600	\$ 38,052	\$ 319,140
1.15	Seeding	5,600	SF	1.50	1.50	1.00	\$ 8,400	\$ 8,400	\$ 5,600	\$ 22,400
1.16	Erosion Control-Silt fence install & remove	1,059	LF	2.41	3.16	0.72	\$ 2,553	\$ 3,347	\$ 763	\$ 6,663
1.17	Temporary fencing	706	LF	7.50	5.25	2.25	\$ 5,297	\$ 3,708	\$ 1,589	\$ 10,593
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 423,784	\$ 299,491	\$ 171,133	\$ 894,409
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, GIS Enclosure-BLDG	490	CY	703.89	804.44	502.78	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
2.25	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138Kv, GIS indoor	15	EA	477,666.67	286,600.00	191,066.67	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
4.19	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	2,449	LF	266.73	202.15	100.00	\$ 653,224	\$ 495,057	\$ 244,912	\$ 1,393,193
6.9	138kV UG- Cable	7,714	LF	145.00	87.00	58.00	\$ 1,118,581	\$ 671,148	\$ 447,432	\$ 2,237,162
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	2,571	LF	7.40	3.33	2.22	\$ 19,021	\$ 8,564	\$ 5,710	\$ 33,295
6.14	Ground Continuity Conductor	2,571	LF	13.04	7.53	5.02	\$ 33,529	\$ 19,355	\$ 12,904	\$ 65,788
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,658,505	\$ 1,489,519	\$ 795,356	\$ 4,943,380
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,140	LF	2.09	3.42	1.46	\$ 6,566	\$ 10,724	\$ 4,596	\$ 21,886
7.2	Caweld, DSA, 4/0 , T, CROSS	91	EA	165.00	75.00		\$ 15,015	\$ 6,825	\$ -	\$ 21,840
7.3	Ground Rod, 3/4" x 15'	72	EA	135.00	67.50	7.50	\$ 9,720	\$ 4,860	\$ 540	\$ 15,120
TOTAL - GROUND GRID							\$ 31,301	\$ 22,409	\$ 5,136	\$ 58,846
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	1	EA	878,048.71	614,634.10	263,414.61	\$ 878,049	\$ 614,634	\$ 263,415	\$ 1,756,097
8.3	Primary Line Relays (87L): SEL-411L	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.4	Backup Line Relays (87L): GE L90	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annuncia	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,925,705	\$ 1,502,309	\$ 534,896	\$ 3,962,909
14 - Northport 138kV GIS Substation							\$ 12,549,198	\$ 8,006,904	\$ 4,618,880	\$ 25,174,983
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		191,127.46	81,911.77	\$ -	\$ 191,127	\$ 81,912	\$ 273,039
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEL Staff and Admin Staff)	1	LS		433,799.31		\$ -	\$ 433,799	\$ -	\$ 433,799
9.4	Utility PM and Project Oversight	1	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.5	Site Accommodation, Facilities, Storage	1	LS	108,449.83			\$ 108,450	\$ -	\$ -	\$ 108,450
	Engineering									
9.6	Design Engineering	1.00	LS		867,598.62		\$ -	\$ 867,599	\$ -	\$ 867,599
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		75,914.88		\$ -	\$ 75,915	\$ -	\$ 75,915
	Testing & Commissioning									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		406,686.85		\$ -	\$ 406,687	\$ -	\$ 406,687
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		32,534.95		\$ -	\$ 32,535	\$ -	\$ 32,535
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	134,312.00	\$ -	\$ -	\$ 134,312	\$ 134,312
9.17	Legal Fees (Real estate)	1.00	LS		-	4,029.36	\$ -	\$ -	\$ 4,029	\$ 4,029
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 800,000	\$ -	\$ -	\$ 800,000	\$ 800,000
9.20	Sales Tax on Materials	8.80%	LS	12,549,198.06			\$ 1,104,329	\$ -	\$ -	\$ 1,104,329
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,174.98		\$ -	\$ 25,175	\$ -	\$ 25,175
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,212,779	\$ 2,378,384	\$ 1,029,353	\$ 4,620,516

<u>NEXtera Energy- TO43 Enhanced 1</u>	
<u>15.Pilgrim 138kV Substation Upgrades</u>	
Total:	\$ 3,731,393

15. Pilgrim 138kV Substation Upgrades

Total: \$ 3,731,393

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
15.Pilgrim 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 112,392	\$ 133,871	\$ 75,747	\$ 322,010
2. SUBSTATION FOUNDATIONS	\$ 61,984	\$ 70,839	\$ 44,274	\$ 177,097
3. SUBSTATION STRUCTURES	\$ 78,293	\$ 94,861	\$ 58,896	\$ 232,051
4. MAJOR EQUIPMENT	\$ 468,798	\$ 116,038	\$ 51,792	\$ 636,628
5. LOW VOLTAGE & CONTROL CABLE	\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
6. CONDUIT & CABLE TRENCH	\$ 86,695	\$ 32,700	\$ 13,035	\$ 132,430
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 114,942	\$ 424,477	\$ 91,527	\$ 630,946
SUBTOTAL (Costs):	\$ 1,193,346	\$ 1,060,359	\$ 381,460	\$ 2,635,164
CONTRACTOR MARK-UP (OH&P)	\$ 214,802	\$ 190,865	\$ 68,663	\$ 474,330
SUBTOTAL:	\$ 1,408,148	\$ 1,251,223	\$ 450,123	\$ 3,109,494
CONTINGENCY ON ENTIRE PROJECT	\$ 281,630	\$ 250,245	\$ 90,025	\$ 621,899
TOTAL:	\$ 1,689,777	\$ 1,501,468	\$ 540,148	\$ 3,731,393

Description of Work: Add 2 terminals to Pilgrim 138kV substation to accommodate the new transmission lines										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 5,400	\$ 3,600	\$ 9,000
1.2	Demolition	1	LS		12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	711	SY	4.85	7.20	4.80	\$ 3,449	\$ 5,120	\$ 3,413	\$ 11,982
1.4	Strip and Dispose Top Soil	807	CY		24.50	10.50	\$ -	\$ 19,763	\$ 8,470	\$ 28,233
1.5	Site Grading- Excavation for Substation Pad	2,420	CY		9.00	6.00	\$ -	\$ 21,780	\$ 14,520	\$ 36,300
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,307	CY		21.00	9.00	\$ -	\$ 27,442.80	\$ 11,761.20	\$ 39,204.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,960	CY		2.40	1.60	\$ -	\$ 4,704	\$ 3,136	\$ 7,841
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,307	CY	25.00	2.40	1.60	\$ 32,670	\$ 3,136	\$ 2,091	\$ 37,897
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	2,420	SY	11.00	6.00	4.00	\$ 26,620	\$ 14,520	\$ 9,680	\$ 50,820
1.11	Site Surfacing - Aggregate 6" Thick	2,420	SY	16.50	4.50	3.00	\$ 39,930	\$ 10,890	\$ 7,260	\$ 58,080
1.12	7' Station Fence w/ Barbed Wire & Grounding	325	LF	13.85	13.85	6.92	\$ 4,501	\$ 4,501	\$ 2,250	\$ 11,252
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	650	LF	2.41	3.16	0.72	\$ 1,567	\$ 2,054	\$ 468	\$ 4,089
1.18	Temporary fencing	488	LF	7.50	5.25	2.25	\$ 3,656	\$ 2,559	\$ 1,097	\$ 7,313
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 112,392	\$ 133,871	\$ 75,747	\$ 322,010
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	9	CY	703.89	804.44	502.78	\$ 6,265	\$ 7,160	\$ 4,475	\$ 17,899
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 61,984	\$ 70,839	\$ 44,274	\$ 177,097
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	4	EA	4,896.84	4,896.84	2,448.42	\$ 19,587	\$ 19,587	\$ 9,794	\$ 48,968
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	216	LF	25.00	184.94	123.29	\$ 5,400	\$ 39,947	\$ 26,631	\$ 71,978
3.22	AL Bus fittings	1	LS	6,480.00	6,480.00	3,240.00	\$ 6,480	\$ 6,480	\$ 3,240	\$ 16,200
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 78,293	\$ 94,861	\$ 58,896	\$ 232,051
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA				\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	2	EA	112,000.00	13,559.00	5,811.00	\$ 224,000	\$ 27,118	\$ 11,622	\$ 262,740
4.24	138kV, Disconnect Switch	4	EA	37,700.00	11,875.50	5,089.50	\$ 150,800	\$ 47,502	\$ 20,358	\$ 218,660
4.25	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	6	EA	4,066.40	1,443.00	962.00	\$ 24,398	\$ 8,658	\$ 5,772	\$ 38,828
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 468,798	\$ 116,038	\$ 51,792	\$ 636,628
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	10,200	LF	5.30	1.43	0.29	\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 86,695	\$ 32,700	\$ 13,035	\$ 132,430
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
10.Shore Road 138kV Substation Upgrades							\$ 1,078,404	\$ 635,881	\$ 289,933	\$ 2,004,218
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		32,403.50	13,887.22	\$ -	\$ 32,404	\$ 13,887	\$ 46,291
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		20,042.18		\$ -	\$ 20,042	\$ -	\$ 20,042
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		80,168.73		\$ -	\$ 80,169	\$ -	\$ 80,169
9.4	Utility PM and Project Oversight	1	LS		20,042.18		\$ -	\$ 20,042	\$ -	\$ 20,042

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.5	Site Accommodation, Facilities, Storage	1	LS	20,042.18			\$ 20,042	\$ -	\$ -	\$ 20,042
	Engineering									
9.6	Design Engineering	1.00	LS		160,337.46		\$ -	\$ 160,337	\$ -	\$ 160,337
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		14,029.53		\$ -	\$ 2,806	\$ -	\$ 2,806
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		75,158.19		\$ -	\$ 75,158	\$ -	\$ 75,158
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		20,042.18		\$ -	\$ 20,042	\$ -	\$ 20,042
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		6,012.65		\$ -	\$ 6,013	\$ -	\$ 6,013
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 74,000	\$ -	\$ -	\$ 74,000	\$ 74,000
9.20	Sales Tax on Materials	8.80%	LS	1,078,403.91			\$ 94,900	\$ -	\$ -	\$ 94,900
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,004.22		\$ -	\$ 2,004	\$ -	\$ 2,004
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 114,942	\$ 424,477	\$ 91,527	\$ 630,946

NEXtera Energy- TO43 Enhanced 1

16. - Comp 155 Buchanan 1200 MW HVDC Converter Substation

Total: \$ 426,426,253

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
16. - Comp 155 Buchanan 1200 MW HVDC Converter Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,590,226	\$ 1,417,100	\$ 807,708	\$ 3,815,034
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 225,000	\$ 135,000	\$ 90,000	\$ 450,000
7. GROUND GRID	\$ 436,905	\$ 316,163	\$ 74,073	\$ 827,142
8. CONTROL ENCLOSURE	\$ 122,812	\$ 98,250	\$ 24,562	\$ 245,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,102,373	\$ 1,483,450	\$ 8,733,335	\$ 26,319,158
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 18,477,317	\$ 3,449,963	\$ 9,729,679	\$ 31,656,958
SUBTOTAL (Costs):	\$ 198,477,317	\$ 63,449,963	\$ 69,729,679	\$ 331,656,958
CONTRACTOR MARK-UP (OH&P)	\$ 14,125,917	\$ 4,220,993	\$ 5,351,342	\$ 23,698,253
SUBTOTAL:	\$ 212,603,234	\$ 67,670,956	\$ 75,081,021	\$ 355,355,211
CONTINGENCY ON ENTIRE PROJECT	\$ 42,520,647	\$ 13,534,191	\$ 15,016,204	\$ 71,071,042
TOTAL:	\$ 255,123,881	\$ 81,205,147	\$ 90,097,225	\$ 426,426,253

Description of Work: Construct a new Buchanan HVDC 1200 MW converter station, with a transition from 320 kV DC to 345 kV AC and tie into the existing Buchanan 345 kV station and the Barrett - Buchanan HVDC cable.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16. - Comp 155 Buchanan 1200 MW HVDC Converter Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.5	ACRE	-	21,000.00	14,000.00	\$ -	\$ 115,500	\$ 77,000	\$ 192,500
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,733	SY	4.85	7.20	4.80	\$ 8,405	\$ 12,478	\$ 8,318	\$ 29,201
1.4	Strip and Dispose Top Soil	8,873	CY		24.50	10.50	\$ -	\$ 217,397	\$ 93,170	\$ 310,567
1.5	Site Grading- Excavation for Substation Pad	26,620	CY		9.00	6.00	\$ -	\$ 239,580	\$ 159,720	\$ 399,300
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	14,375	CY		21.00	9.00	\$ -	\$ 301,870.80	\$ 129,373.20	\$ 431,244.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	21,562	CY		2.40	1.60	\$ -	\$ 51,749	\$ 34,500	\$ 86,249
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,375	CY	25.00	2.40	1.60	\$ 359,370	\$ 34,500	\$ 23,000	\$ 416,869
1.9	Install substation 8" pad base	13,310	SY	11.00	6.00	4.00	\$ 146,410	\$ 79,860	\$ 53,240	\$ 279,510
1.10	Site Surfacing - Aggregate 6" Thick	19,965	SY	16.50	4.50	3.00	\$ 329,423	\$ 89,843	\$ 59,895	\$ 479,160
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,980	LF	13.85	13.85	6.92	\$ 27,419	\$ 27,419	\$ 13,710	\$ 68,548
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.15	Seeding	15,840	SF	1.50	1.50	1.00	\$ 23,760	\$ 23,760	\$ 15,840	\$ 63,360
1.16	Erosion Control-Silt fence install & remove	3,267	LF	2.41	3.16	0.72	\$ 7,873	\$ 10,324	\$ 2,352	\$ 20,549
1.17	Temporary fencing	2,178	LF	7.50	5.25	2.25	\$ 16,335	\$ 11,435	\$ 4,901	\$ 32,670
1.18	Substation entrance with asphalt	1,111	SY	19.50	26.00	19.50	\$ 21,665	\$ 28,886	\$ 21,665	\$ 72,215
1.19	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,590,226	\$ 1,417,100	\$ 807,708	\$ 3,815,034
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Builiding		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA	849,444.44	509,666.67	339,777.78	\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building		EA							
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	-
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	-
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV-OH	600	LF	375.00	225.00	150.00	\$ 225,000	\$ 135,000	\$ 90,000	\$ 450,000
6.8	345kV UG- Conduit		LF	266.73	202.15	100.00				
6.9	345kV UG- Cable		LF	167.00	100.20	66.80				
6.10	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28				
6.11	Fiber Optic Cable		LF	7.40	3.33	2.22				
6.12	Ground Continuity Conductor		LF	13.04	7.53	5.02				
TOTAL - CONDUIT & CABLE TRENCH							\$ 225,000	\$ 135,000	\$ 90,000	\$ 450,000
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	44,950	LF	2.09	3.42	1.46	\$ 93,990	\$ 153,518	\$ 65,793	\$ 313,302
7.2	Caweld, DSA, 4/0 , T, CROSS	1,175	EA	165.00	75.00		\$ 193,875	\$ 88,125	\$ -	\$ 282,000
7.3	Ground Rod, 3/4" x 15'	1,104	EA	135.00	67.50	7.50	\$ 149,040	\$ 74,520	\$ 8,280	\$ 231,840
TOTAL - GROUND GRID							\$ 436,905	\$ 316,163	\$ 74,073	\$ 827,142
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annuncia	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.11	HMI Panel	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.13	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annuncia	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.15	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.17	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.20	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.21	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 122,812	\$ 98,250	\$ 24,562	\$ 245,625
16. - Comp 155 Buchanan 1200 MW HVDC Converter Substation							\$ 182,374,944	\$ 61,966,512	\$ 60,996,344	\$ 305,337,800
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		103,699.97	44,442.84	\$ -	\$ 103,700	\$ 44,443	\$ 148,143
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		53,378.00		\$ -	\$ 53,378	\$ -	\$ 53,378
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		213,512.01		\$ -	\$ 213,512	\$ -	\$ 213,512
9.4	Utility PM and Project Oversight	1	LS		53,378.00		\$ -	\$ 53,378	\$ -	\$ 53,378
9.5	Site Accommodation, Facilities, Storage	1	LS	53,378.00			\$ 53,378	\$ -	\$ -	\$ 53,378
	Engineering									
9.6	Design Engineering	1.00	LS		427,024.01		\$ -	\$ 427,024	\$ -	\$ 427,024
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		37,364.60		\$ -	\$ 37,365	\$ -	\$ 37,365
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		200,167.51		\$ -	\$ 200,168	\$ -	\$ 200,168
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		53,378.00		\$ -	\$ 53,378	\$ -	\$ 53,378
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		16,013.40		\$ -	\$ 16,013	\$ -	\$ 16,013
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			155,138.00	\$ -	\$ -	\$ 155,138	\$ 155,138
9.17	Legal Fees (Real estate)	1.00	LS		-	4,654.14	\$ -	\$ -	\$ 4,654	\$ 4,654
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 8,520,000	\$ -	\$ -	\$ 8,520,000	\$ 8,520,000
9.20	Sales Tax on Materials	8.80%	LS	182,374,943.87			\$ 16,048,995	\$ -	\$ -	\$ 16,048,995
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		305,337.80		\$ -	\$ 305,338	\$ -	\$ 305,338
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,102,373	\$ 1,483,450	\$ 8,733,335	\$ 26,319,158

NEXTera Energy- TO37 Core 2

17. Farragut 345kV Substation Expansion

Total: \$ 131,651,302

NEXTera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
17. Farragut 345kV Substation Expansion				
1. MARINE CONSTRUCITON CIVIL	\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS	\$ 1,162,370	\$ 1,238,851	\$ 778,407	\$ 3,179,628
3. SUBSTATION STRUCTURES	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
4. MAJOR EQUIPMENT	\$ 11,092,004	\$ 3,745,840	\$ 2,486,960	\$ 17,324,804
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID	\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE	\$ 2,437,317	\$ 1,844,360	\$ 711,958	\$ 4,993,635
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,315,834	\$ 14,052,958	\$ 3,272,134	\$ 20,640,926
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 28,693,435	\$ 35,303,634	\$ 19,760,405	\$ 83,757,473
SUBTOTAL (Costs):	\$ 33,823,435	\$ 38,381,634	\$ 21,812,405	\$ 94,017,473
CONTRACTOR MARK-UP (OH&P)	\$ 5,472,618	\$ 6,539,334	\$ 3,679,993	\$ 15,691,945
SUBTOTAL:	\$ 39,296,053	\$ 44,920,968	\$ 25,492,397	\$ 109,709,418
CONTINGENCY ON ENTIRE PROJECT	\$ 7,859,211	\$ 8,984,194	\$ 5,098,479	\$ 21,941,884
TOTAL:	\$ 47,155,264	\$ 53,905,161	\$ 30,590,877	\$ 131,651,302

Description of Work: Expand the existing Sprain Brook 345kV substation with additional GIS bay.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
17. Farragut 345kV Substation Expansion										
1. MARINE CONSTRUCITON CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	68,400.00	45,600.00	\$ -	\$ 68,400	\$ 45,600	\$ 114,000
1.3	Sheet Pile Wall	840	FT	3,778.81	6,046.09	5,290.33	\$ 3,174,199	\$ 5,078,718	\$ 4,443,878	\$ 12,696,795
1.4	Dewater	1	LS		225,000.00	150,000.00	\$ -	\$ 225,000	\$ 150,000	\$ 375,000
1.5	Excavate and Remove existing organic material	8,077	CY		300.00	200.00	\$ -	\$ 2,423,111	\$ 1,615,407	\$ 4,038,519
1.6	Backfill (import, compacted in place)	65,424	CY	77.50	46.50	31.00	\$ 5,070,360	\$ 3,042,216	\$ 2,028,144	\$ 10,140,720
1.7	18" concrete pile	1,392	EA	3,367.00	3,030.30	2,020.20	\$ 4,686,864	\$ 4,218,178	\$ 2,812,118	\$ 11,717,160
1.8	Concrete Slab (Pier)	4,846	CY	480.00	448.00	672.00	\$ 2,326,187	\$ 2,171,108	\$ 3,256,661	\$ 7,753,956
1.9	3.5' Sea wall	610	FT	175.50	163.80	245.70	\$ 107,055	\$ 99,918	\$ 149,877	\$ 356,850
1.10	Continuous concrete on bulkhead	0	FT	234.00	218.40	327.60	\$ -	\$ -	\$ -	\$ -
1.11	Outter fender system	0	LF	80.00	48.00	72.00	\$ -	\$ -	\$ -	\$ -
1.12										
1.13										
TOTAL - Marine Construction Civil							\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	221	CY	703.89	804.44	502.78	\$ 155,559	\$ 177,781	\$ 111,113	\$ 444,453
2.15	345kV, Shunt Reactor with oil containment-275MVAR	300	CY	703.89	804.44	502.78	\$ 211,166	\$ 241,332	\$ 150,833	\$ 603,330
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	896	CY	703.89	804.44	502.78	\$ 630,646	\$ 720,738	\$ 450,461	\$ 1,801,845
2.32	Precast Firewall for transformer, PARs, reactors	6,600	SF	25.00	15.00	10.00	\$ 165,000	\$ 99,000	\$ 66,000	\$ 330,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,162,370	\$ 1,238,851	\$ 778,407	\$ 3,179,628
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch-3 Ph	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28		\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50		\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.9	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,487.50	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.10	Transport & Testing- Shunt Reactor	2	EA		330,400.00	216,600.00	\$ -	\$ 660,800	\$ 433,200	\$ 1,094,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker	0	EA		57,239.00	24,531.00		\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA					\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA					\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00		\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00		\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50		\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75		\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 11,092,004	\$ 3,745,840	\$ 2,486,960	\$ 17,324,804
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	575	LF	266.50	53.04	13.26	\$ 153,238	\$ 30,498	\$ 7,625	\$ 191,360
6.7										
6.8	138kV UG- Conduit	0	LF	41.00	30.00	16.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	9,360.00	11,700.00		\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	52.00	47.00	29.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,000	LF	2.09	3.42	1.46	\$ 10,455	\$ 17,077	\$ 7,319	\$ 34,850
7.2	Caweld, DSA, 4/0 , T, CROSS	143	EA	165.00	75.00		\$ 23,595	\$ 10,725	\$ -	\$ 34,320
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	1,577,942.61	1,104,559.83	473,382.78	\$ 1,577,943	\$ 1,104,560	\$ 473,383	\$ 3,155,885
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annu	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.18	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,437,317	\$ 1,844,360	\$ 711,958	\$ 4,993,635
17. Farragut 345kV Substation Expansion							\$ 30,507,600	\$ 24,328,676	\$ 18,540,270	\$ 73,376,547
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,500,413.12	643,034.19	\$ -	\$ 1,500,413	\$ 643,034	\$ 2,143,447
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		631,165.47		\$ -	\$ 631,165	\$ -	\$ 631,165

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,524,661.87		\$ -	\$ 2,524,662	\$ -	\$ 2,524,662
9.4	Utility PM and Project Oversite	1	LS		631,165.47		\$ -	\$ 631,165	\$ -	\$ 631,165
9.5	Site Accommodation, Facilities, Storage	1	LS	631,165.47			\$ 631,165	\$ -	\$ -	\$ 631,165
	Engineering									
9.6	Design Engineering	1.00	LS		5,049,323.74		\$ -	\$ 5,049,324	\$ -	\$ 5,049,324
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		441,815.83		\$ -	\$ 441,816	\$ -	\$ 441,816
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,366,870.50		\$ -	\$ 2,366,871	\$ -	\$ 2,366,871
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		631,165.47		\$ -	\$ 631,165	\$ -	\$ 631,165
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		189,349.64		\$ -	\$ 189,350	\$ -	\$ 189,350
9.15	Laydown Lease	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,620,000	\$ -	\$ -	\$ 2,620,000	\$ 2,620,000
9.20	Sales Tax on Materials	8.80%	LS	30,507,600.43			\$ 2,684,669	\$ -	\$ -	\$ 2,684,669
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		73,376.55		\$ -	\$ 73,377	\$ -	\$ 73,377
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,315,834	\$ 14,052,958	\$ 3,272,134	\$ 20,640,926

NEXTera Energy- TO43 Enhanced 1

18- New Barrett HVDC 1200MW Converter Station

Total: \$ 438,528,673

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
18- New Barrett HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,567,674	\$ 1,388,365	\$ 787,141	\$ 3,743,181
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE	\$ 165,469	\$ 132,375	\$ 33,094	\$ 330,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,057,316	\$ 1,302,368	\$ 18,344,366	\$ 35,704,050
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 18,015,476	\$ 2,985,770	\$ 19,202,620	\$ 40,203,865
SUBTOTAL (Costs):	\$ 198,015,476	\$ 62,985,770	\$ 79,202,620	\$ 340,203,865
CONTRACTOR MARK-UP (OH&P)	\$ 14,042,786	\$ 4,137,439	\$ 7,056,472	\$ 25,236,696
SUBTOTAL:	\$ 212,058,262	\$ 67,123,208	\$ 86,259,091	\$ 365,440,561
CONTINGENCY ON ENTIRE PROJECT	\$ 42,411,652	\$ 13,424,642	\$ 17,251,818	\$ 73,088,112
TOTAL:	\$ 254,469,914	\$ 80,547,850	\$ 103,510,909	\$ 438,528,673

Description of Work: Construct a new Barrett HVDC 1200 MW converter station, with a transition from 320 kV DC to 138 kV AC and tie into the new Barrett 138 kV GIS station and theConstruct a new Barrett HVDC 1200 MW converter station, with a transition from 320 kV DC to 138 kV AC and tie into the new Barrett 138 kV GIS station and the Barrett - Buchanan HVDC cable.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
18- New Barrett HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.5	ACRE	-	21,000.00	14,000.00	\$ -	\$ 115,500	\$ 77,000	\$ 192,500
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,200	SY	4.85	7.20	4.80	\$ 10,670	\$ 15,840	\$ 10,560	\$ 37,070
1.4	Strip and Dispose Top Soil	8,873	CY		24.50	10.50	\$ -	\$ 217,397	\$ 93,170	\$ 310,567
1.5	Site Grading- Excavation for Substation Pad	26,620	CY		9.00	6.00	\$ -	\$ 239,580	\$ 159,720	\$ 399,300
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	14,375	CY		21.00	9.00	\$ -	\$ 301,870.80	\$ 129,373.20	\$ 431,244.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	21,562	CY		2.40	1.60	\$ -	\$ 51,749	\$ 34,500	\$ 86,249
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,375	CY	25.00	2.40	1.60	\$ 359,370	\$ 34,500	\$ 23,000	\$ 416,869
1.9	Install substation 8" pad base	13,310	SY	11.00	6.00	4.00	\$ 146,410	\$ 79,860	\$ 53,240	\$ 279,510
1.10	Site Surfacing - Aggregate 6" Thick	19,965	SY	16.50	4.50	3.00	\$ 329,423	\$ 89,843	\$ 59,895	\$ 479,160
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,922	LF	13.85	13.85	6.92	\$ 26,616	\$ 26,616	\$ 13,308	\$ 66,540
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.15	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.16	Erosion Control-Silt fence install & remove	3,171	LF	2.41	3.16	0.72	\$ 7,643	\$ 10,021	\$ 2,283	\$ 19,947
1.17	Temporary fencing	2,114	LF	7.50	5.25	2.25	\$ 15,857	\$ 11,100	\$ 4,757	\$ 31,713
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,567,674	\$ 1,388,365	\$ 787,141	\$ 3,743,181
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Builiding	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.13	Fiber Optic Cable		LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.14	Ground Continuity Conductor		LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	23,100	LF	2.09	3.42	1.46	\$ 48,302	\$ 78,893	\$ 33,811	\$ 161,007
7.2	Caweld, DSA, 4/0 , T, CROSS	612	EA	165.00	75.00		\$ 100,980	\$ 45,900	\$ -	\$ 146,880
7.3	Ground Rod, 3/4" x 15'	561	EA	135.00	67.50	7.50	\$ 75,735	\$ 37,868	\$ 4,208	\$ 117,810
TOTAL - GROUND GRID							\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annuncia	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.8	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.9	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 165,469	\$ 132,375	\$ 33,094	\$ 330,937
18- New Barrett HVDC 1200MW Converter Station							\$ 181,958,160	\$ 61,683,401	\$ 60,858,254	\$ 304,499,815
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.1	Mob / Demob	1.0	LS		88,957.93	38,124.83	\$ -	\$ 88,958	\$ 38,125	\$ 127,083
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		44,998.15		\$ -	\$ 44,998	\$ -	\$ 44,998
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		179,992.61		\$ -	\$ 179,993	\$ -	\$ 179,993
9.4	Utility PM and Project Oversight	1	LS		44,998.15		\$ -	\$ 44,998	\$ -	\$ 44,998
9.5	Site Accommodation, Facilities, Storage	1	LS	44,998.15			\$ 44,998	\$ -	\$ -	\$ 44,998
	Engineering									
9.6	Design Engineering	1.00	LS		359,985.21		\$ -	\$ 359,985	\$ -	\$ 359,985
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		31,498.71		\$ -	\$ 31,499	\$ -	\$ 31,499
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		168,743.07		\$ -	\$ 168,743	\$ -	\$ 168,743
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		44,998.15		\$ -	\$ 44,998	\$ -	\$ 44,998
9.13	Environmental-special studies/investigation	1.00	LS		-	4,500,000.00	\$ -	\$ -	\$ 4,500,000	\$ 4,500,000
9.14	Warranties / LOC's	1.00	LS		13,499.45		\$ -	\$ 13,499	\$ -	\$ 13,499
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	4,890,428.00	\$ -	\$ -	\$ 4,890,428	\$ 4,890,428
9.17	Legal Fees (Real estate)	1.00	LS		-	146,712.84	\$ -	\$ -	\$ 146,713	\$ 146,713
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 8,760,000	\$ -	\$ -	\$ 8,760,000	\$ 8,760,000
9.20	Sales Tax on Materials	8.80%	LS	181,958,159.88			\$ 16,012,318	\$ -	\$ -	\$ 16,012,318
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		304,499.82		\$ -	\$ 304,500	\$ -	\$ 304,500
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,057,316	\$ 1,302,368	\$ 18,344,366	\$ 35,704,050

NEXTera Energy- TO43 Enhanced 1

19.Holbrook 138kV Substation Upgrades

Total: \$ 4,300,301

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
19.Holbrook 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 231,611	\$ 238,850	\$ 140,472	\$ 610,933
2. SUBSTATION FOUNDATIONS	\$ 90,358	\$ 103,266	\$ 64,541	\$ 258,165
3. SUBSTATION STRUCTURES	\$ 181,017	\$ 269,516	\$ 172,258	\$ 622,791
4. MAJOR EQUIPTMENT	\$ 287,198	\$ 83,278	\$ 37,752	\$ 408,228
5. LOW VOLTAGE & CONTROL CABLE	\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
6. CONDUIT & CABLE TRENCH	\$ 143,326	\$ 43,971	\$ 15,853	\$ 203,150
7. GROUND GRID	\$ 29,940	\$ 21,076	\$ 4,704	\$ 55,719
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 116,451	\$ 496,141	\$ 108,476	\$ 721,068
SUBTOTAL (Costs):	\$ 1,176,592	\$ 1,304,834	\$ 555,509	\$ 3,036,935
CONTRACTOR MARK-UP (OH&P)	\$ 211,787	\$ 234,870	\$ 99,992	\$ 546,648
SUBTOTAL:	\$ 1,388,379	\$ 1,539,705	\$ 655,501	\$ 3,583,584
CONTINGENCY ON ENTIRE PROJECT	\$ 277,676	\$ 307,941	\$ 131,100	\$ 716,717
TOTAL:	\$ 1,666,054	\$ 1,847,645	\$ 786,601	\$ 4,300,301

Description of Work: Install a new breaker at Holbrook 138 kV substation to create a new terminal

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.7	ACRE	-	10,800.00	7,200.00	\$ -	\$ 7,560	\$ 5,040	\$ 12,600
1.2	Demolition	1	LS		24,000.00	16,000.00	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
1.3	New Access Road - 20'	967	SY	4.85	7.20	4.80	\$ 4,688	\$ 6,960	\$ 4,640	\$ 16,288
1.4	Strip and Dispose Top Soil	1,129	CY		24.50	10.50	\$ -	\$ 27,669	\$ 11,858	\$ 39,527
1.5	Site Grading- Excavation for Substation Pad	3,388	CY		9.00	6.00	\$ -	\$ 30,492	\$ 20,328	\$ 50,820
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,830	CY		21.00	9.00	\$ -	\$ 38,419.92	\$ 16,465.68	\$ 54,885.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,744	CY		2.40	1.60	\$ -	\$ 6,586	\$ 4,391	\$ 10,977
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,830	CY	25.00	2.40	1.60	\$ 45,738	\$ 4,391	\$ 2,927	\$ 53,056
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,388	SY	11.00	6.00	4.00	\$ 37,268	\$ 20,328	\$ 13,552	\$ 71,148
1.11	Site Surfacing - Aggregate 6" Thick	3,388	SY	16.50	4.50	3.00	\$ 55,902	\$ 15,246	\$ 10,164	\$ 81,312
1.12	7' Station Fence w/ Barbed Wire & Grounding	435	LF	13.85	13.85	6.92	\$ 6,024	\$ 6,024	\$ 3,012	\$ 15,060
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	75,000.00	45,000.00	30,000.00	\$ 75,000	\$ 45,000	\$ 30,000	\$ 150,000
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	870	LF	2.41	3.16	0.72	\$ 2,097	\$ 2,749	\$ 626	\$ 5,472
1.18	Temporary fencing	653	LF	7.50	5.25	2.25	\$ 4,894	\$ 3,426	\$ 1,468	\$ 9,788
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 231,611	\$ 238,850	\$ 140,472	\$ 610,933
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	9	CY	703.89	804.44	502.78	\$ 6,265	\$ 7,160	\$ 4,475	\$ 17,899
2.24	138kV, Bus support-3 Ph, low	27	CY	703.89	804.44	502.78	\$ 18,829	\$ 21,519	\$ 13,449	\$ 53,797
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	36	CY	703.89	804.44	502.78	\$ 25,607	\$ 29,266	\$ 18,291	\$ 73,164
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 90,358	\$ 103,266	\$ 64,541	\$ 258,165
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	5	EA	4,173.00	2,879.76	1,919.84	\$ 20,865	\$ 14,399	\$ 9,599	\$ 44,863
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	4	EA	4,896.84	4,896.84	2,448.42	\$ 19,587	\$ 19,587	\$ 9,794	\$ 48,968
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	2	EA	33,000.00	19,800.00	13,200.00	\$ 66,000	\$ 39,600	\$ 26,400	\$ 132,000
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	831	LF	25.00	184.94	123.29	\$ 20,775	\$ 153,683	\$ 102,456	\$ 276,914
3.22	AL. Bus fittings	1	LS	24,930.00	24,930.00	12,465.00	\$ 24,930	\$ 24,930	\$ 12,465	\$ 62,325
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 181,017	\$ 269,516	\$ 172,258	\$ 622,791
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA				\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Circuit Breaker, reinstallation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.25	138kV, Disconnect Switch	4	EA	37,700.00	11,875.50	5,089.50	\$ 150,800	\$ 47,502	\$ 20,358	\$ 218,660
4.26	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.27	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.28	138kV, Surge arrester	6	EA	4,066.40	1,443.00	962.00	\$ 24,398	\$ 8,658	\$ 5,772	\$ 38,828
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 287,198	\$ 83,278	\$ 37,752	\$ 408,228
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	10,200	LF	5.30	1.43	0.29	\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	463	LF	266.50	53.04	13.26	\$ 123,256	\$ 24,531	\$ 6,133	\$ 153,920
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 143,326	\$ 43,971	\$ 15,853	\$ 203,150
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,855	LF	2.09	3.42	1.46	\$ 5,970	\$ 9,751	\$ 4,179	\$ 19,899
7.2	Caweld, DSA, 4/0 , T, CROSS	88	EA	165.00	75.00		\$ 14,520	\$ 6,600	\$ -	\$ 21,120
7.3	Ground Rod, 3/4" x 15'	70	EA	135.00	67.50	7.50	\$ 9,450	\$ 4,725	\$ 525	\$ 14,700
TOTAL - GROUND GRID							\$ 29,940	\$ 21,076	\$ 4,704	\$ 55,719
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
10.Shore Road 138kV Substation Upgrades							\$ 1,060,141	\$ 808,693	\$ 447,033	\$ 2,315,867
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		43,950.42	18,835.89	\$ -	\$ 43,950	\$ 18,836	\$ 62,786
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		23,158.67		\$ -	\$ 23,159	\$ -	\$ 23,159
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		92,634.69		\$ -	\$ 92,635	\$ -	\$ 92,635
9.4	Utility PM and Project Oversight	1	LS		23,158.67		\$ -	\$ 23,159	\$ -	\$ 23,159
9.5	Site Accommodation, Facilities, Storage	1	LS	23,158.67			\$ 23,159	\$ -	\$ -	\$ 23,159
	Engineering									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.6	Design Engineering	1.00	LS		185,269.38		\$ -	\$ 185,269	\$ -	\$ 185,269
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		16,211.07		\$ -	\$ 3,242	\$ -	\$ 3,242
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		86,845.02		\$ -	\$ 86,845	\$ -	\$ 86,845
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		23,158.67		\$ -	\$ 23,159	\$ -	\$ 23,159
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		6,947.60		\$ -	\$ 6,948	\$ -	\$ 6,948
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 86,000	\$ -	\$ -	\$ 86,000	\$ 86,000
9.20	Sales Tax on Materials	8.80%	LS	1,060,140.93			\$ 93,292	\$ -	\$ -	\$ 93,292
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,315.87		\$ -	\$ 2,316	\$ -	\$ 2,316
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 116,451	\$ 496,141	\$ 108,476	\$ 721,068

NEXTera Energy- TO43 Enhanced 1

20. Existing Ruland Road 138 kV Substation Upgrades

Total: \$ 2,030,035

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
20. Existing Ruland Road 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at existng 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
20. Existing Ruland Road 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
=3*3	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
11	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL Bus fittings		LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.24	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	345kV, Circuit Breaker (PASS)	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Gas Insulated Switchgear, BAAH Arrangement		BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA		EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	Fiber Optic Cable		LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.12	Ground Continuity Conductor		LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg		EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg		EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.21	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
20. Existing Ruland Road 138 kV Substation Upgrades							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXTera Energy- TO43 Enhanced 1

21. Existing East Garden City 138 kV Substation Upgrades

Total: \$ 28,298,464

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
21. Existing East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
21. Existing East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.22	AL Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00				
4.10	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	Transport & Testing- Shunt Reactor	0	EA		424,900.00	279,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.14	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.25	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.28	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.22	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.23	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.24	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.25	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
21. Existing East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversight	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
	Engineering									
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

NEXtera Energy- TO43 Enhanced 1

Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit

(EGC To Dunwoodie 345 kV)

Total: \$ 188,625,656

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 7	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR /GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

NEXtera Energy- TO43 Enhanced 1

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits

(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)

Total: \$ 346,473,248

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
=A18				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632
SUBTOTAL (Costs):	\$ 92,520,355	\$ 99,703,098	\$ 52,461,045	\$ 244,684,497
CONTRACTOR MARK-UP (OH&P)	\$ 16,653,664	\$ 17,946,558	\$ 9,442,988	\$ 44,043,210
SUBTOTAL:	\$ 109,174,018	\$ 117,649,655	\$ 61,904,033	\$ 288,727,707
CONTINGENCY ON ENTIRE PROJECT	\$ 21,834,804	\$ 23,529,931	\$ 12,380,807	\$ 57,745,541
TOTAL:	\$ 131,008,822	\$ 141,179,587	\$ 74,284,840	\$ 346,473,248

Description of Work: Dunwoodie - New Rochelle Landing (double circuit duct). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	520	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 832,000	\$ 2,496,000	\$ 832,000	\$ 4,160,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	20,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,496,000	\$ 561,600	\$ 3,057,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.47	Miile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-SP -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	8.47	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	357,773	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 715,546	\$ 536,659	\$ 178,886	\$ 1,431,091
2.3	Trench Excavation	33,790	CY		\$ 17.5	\$ 7.5	\$ -	\$ 591,319	\$ 253,422	\$ 844,741
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,520	CY	\$ 50	\$ 25	\$ 14	\$ 175,988	\$ 86,234	\$ 49,277	\$ 311,498
2.5	Supply & Install Thermal Backfill -conduit level	29,566	CY	\$ 350	\$ 245	\$ 105	\$ 10,348,081	\$ 7,243,657	\$ 3,104,424	\$ 20,696,163
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,774	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,754,851	\$ 1,721,782	\$ 688,713	\$ 5,165,345
2.8	Conduit 8" SCH 40PVC	357,773	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 10,232,302	\$ 2,028,572	\$ 869,388	\$ 13,130,262
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	178,886	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 629,680	\$ 563,492	\$ 241,497	\$ 1,434,669
2.11	Warning Tape	44,722	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,708	\$ 11,180	\$ 4,472	\$ 22,361
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	5,984	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,720	\$ 44,880	\$ 149,600
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000
2.15	Splice Vault Backfill	1,795	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,133	\$ 10,771	\$ 35,904
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	Air Test Ducts	536,659	LF			\$ 0.25	\$ -	\$ -	\$ 134,165	\$ 134,165
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	28,581	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 400,133	\$ 400,133	\$ 200,067	\$ 1,000,333
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,939	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 177,678	\$ 186,562	\$ 79,955	\$ 444,195
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	138	EA		\$ 400	\$ 1,200	\$ -	\$ 55,097	\$ 165,291	\$ 220,388
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	138	EA		\$ 10	\$ 15	\$ -	\$ 1,377	\$ 2,066	\$ 3,444
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	296	EA		\$ 400	\$ 1,200	\$ -	\$ 118,264	\$ 354,791	\$ 473,055
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 462,462	\$ 308,308	\$ -	\$ 462,462	\$ 308,308	\$ 770,770
2.24	Excess Materials Disposal to Certified Backfill	49,372	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,209,614	\$ 518,406	\$ 1,728,020
2.25	Rock Excavation and Removal	26,516	CY		\$ 243	\$ 162	\$ -	\$ 6,443,332	\$ 4,295,555	\$ 10,738,886
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,774	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,774	\$ 19,887	\$ 59,660
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.5	Circuit #2- Cable Splicing- 345kV 5000 kmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	93,915	FT	\$ 7	\$ 3	\$ 2	\$ 694,692	\$ 312,794	\$ 208,530	\$ 1,216,016
3.12	Ground Continuity Conductor	93,915	FT	\$ 13	\$ 8	\$ 5	\$ 1,224,562	\$ 706,901	\$ 471,267	\$ 2,402,731
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Dobule circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain							\$ 83,180,792	\$ 70,079,524	\$ 42,050,550	\$ 195,310,866
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,363,902	\$ 2,242,601	\$ -	\$ 3,363,902	\$ 2,242,601	\$ 5,606,504
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		7,812,434.62		\$ -	\$ 7,812,435	\$ -	\$ 7,812,435
4.4	Utility PM and Project Oversight	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.5	Site Accommodation, Facilities, Storage	1	LS	1,953,108.66			\$ 1,953,109	\$ -	\$ -	\$ 1,953,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,765,543	\$ -	\$ -	\$ 9,765,543	\$ -	\$ 9,765,543
4.7	LiDAR /GPR	1.0	LS		\$ 351,560	\$ 234,373	\$ -	\$ 351,560	\$ 234,373	\$ 585,933
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 820,306	\$ 546,870	\$ -	\$ 820,306	\$ 546,870	\$ 1,367,176
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,953,109		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 585,933		\$ -	\$ 585,933	\$ -	\$ 585,933
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 247,533	\$ -	\$ -	\$ 247,533	\$ 247,533
4.16	Legal Fees (Real estate)	1.00	LS		-	7,425.99	\$ -	\$ -	\$ 7,426	\$ 7,426
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,920,000	\$ -	\$ -	\$ 6,920,000	\$ 6,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 83,180,791.58			\$ 7,386,454	\$ -	\$ -	\$ 7,386,454
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 195,311	\$ -	\$ -	\$ 195,311	\$ 195,311
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632

NEXtera Energy- TO43 Enhanced 1

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit

(Northport To Sprain Brook 320 kV DC)

Total: \$ 159,124,018

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 13,444,148	\$ 13,874,209	\$ 9,004,614	\$ 36,322,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 18,612,600	\$ 10,891,459	\$ 7,013,404	\$ 36,517,464
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,926,289	\$ 14,226,390	\$ 4,874,509	\$ 23,027,188
SUBTOTAL (Costs):	\$ 38,079,485	\$ 49,278,448	\$ 25,017,786	\$ 112,375,719
CONTRACTOR MARK-UP (OH&P)	\$ 6,854,307	\$ 8,870,121	\$ 4,503,202	\$ 20,227,629
SUBTOTAL:	\$ 44,933,792	\$ 58,148,568	\$ 29,520,988	\$ 132,603,348
CONTINGENCY ON ENTIRE PROJECT	\$ 8,986,758	\$ 11,629,714	\$ 5,904,198	\$ 26,520,670
TOTAL:	\$ 53,920,551	\$ 69,778,282	\$ 35,425,185	\$ 159,124,018

Description of Work: Northport - New Rochelle Landing (single circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	352,013	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 704,026	\$ 528,019	\$ 176,006	\$ 1,408,051
2.3	Trench Excavation	17,601	CY		\$ 17.5	\$ 7.5	\$ -	\$ 308,011	\$ 132,005	\$ 440,016
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,833	SF	\$ 50	\$ 25	\$ 14	\$ 91,670	\$ 44,918	\$ 25,668	\$ 162,256
2.5	Supply & Install Thermal Backfill	15,401	CY	\$ 350	\$ 245	\$ 105	\$ 5,390,196	\$ 3,773,137	\$ 1,617,059	\$ 10,780,392
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,717	CY	\$ 200	\$ 125	\$ 50	\$ 1,543,478	\$ 964,674	\$ 385,870	\$ 2,894,022
2.9	Conduit 8" SCH 40PVC	134,165	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 3,837,113	\$ 760,714	\$ 326,020	\$ 4,923,848
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	134,165	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 472,260	\$ 422,619	\$ 181,122	\$ 1,076,002
2.12	Warning Tape	89,443	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,416	\$ 22,361	\$ 8,944	\$ 44,722
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,464	CY		\$ 17.5	\$ 7.5	\$ -	\$ 43,120	\$ 18,480	\$ 61,600
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	739	CY		\$ 14.0	\$ 6.0	\$ -	\$ 10,349	\$ 4,435	\$ 14,784
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	268,330	LF			\$ 0.25	\$ -	\$ -	\$ 67,082	\$ 67,082
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,916	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 236,826	\$ 236,826	\$ 118,413	\$ 592,065
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,699	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 105,162	\$ 110,420	\$ 47,323	\$ 262,905

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	77	EA		\$ 400	\$ 1,200	\$ -	\$ 30,870	\$ 92,609	\$ 123,478
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	77	EA		\$ 10	\$ 15	\$ -	\$ 772	\$ 1,158	\$ 1,929
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,602	\$ 184,807	\$ 246,409
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	25,123	CY		\$ 24.5	\$ 10.5	\$ -	\$ 615,515	\$ 263,792	\$ 879,308
2.27	Rock Excavation and Removal	13,376	CY		\$ 243	\$ 162	\$ -	\$ 3,250,472	\$ 2,166,981	\$ 5,417,453
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	20,065	CF		\$ 1.0	\$ 0.5	\$ -	\$ 20,065	\$ 10,032	\$ 30,097
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,444,148	\$ 13,874,209	\$ 9,004,614	\$ 36,322,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320 DCKV 5000 kcmil copper XLPE	93,915	FT	\$ 166	\$ 100	\$ 66	\$ 15,589,950	\$ 9,353,970	\$ 6,235,980	\$ 31,179,900
3.2	Circuit #1- Cable Splicing- 320 DCKV 5000 kcmil copper XLPE	60	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 1,160,940	\$ 590,789	\$ 168,797	\$ 1,920,526
3.3	Circuit #1- Cable Termination- 320 DCKV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.4	Circuit #2- Procurement & Installation- 320 DCKV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 320 DCKV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 320 DCKV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 320 DCKV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320 DCKV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320 DCKV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 629,624	\$ 377,774	\$ 251,849	\$ 1,259,247
3.11	Fiber Optic Cable	46,958	FT	\$ 7	\$ 3	\$ 2	\$ 347,346	\$ 156,397	\$ 104,265	\$ 608,008
3.12	Ground Continuity Conductor	46,958	FT	\$ 13	\$ 8	\$ 5	\$ 612,281	\$ 353,450	\$ 235,634	\$ 1,201,365
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 18,612,600	\$ 10,891,459	\$ 7,013,404	\$ 36,517,464
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 34,153,196	\$ 35,052,057	\$ 20,143,277	\$ 89,348,530
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,655,860	\$ 1,103,907	\$ -	\$ 1,655,860	\$ 1,103,907	\$ 2,759,767
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		893,485.30		\$ -	\$ 893,485	\$ -	\$ 893,485
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		3,573,941.22		\$ -	\$ 3,573,941	\$ -	\$ 3,573,941
4.4	Utility PM and Project Oversight	1	LS		893,485.30		\$ -	\$ 893,485	\$ -	\$ 893,485
4.5	Site Accommodation, Facilities, Storage	1	LS	893,485.30			\$ 893,485	\$ -	\$ -	\$ 893,485
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,467,427	\$ -	\$ -	\$ 4,467,427	\$ -	\$ 4,467,427
4.7	LiDAR /GPR	1.0	LS		\$ 160,827	\$ 107,218	\$ -	\$ 160,827	\$ 107,218	\$ 268,046
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 375,264	\$ 250,176	\$ -	\$ 375,264	\$ 250,176	\$ 625,440
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 893,485		\$ -	\$ 893,485	\$ -	\$ 893,485
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 268,046		\$ -	\$ 268,046	\$ -	\$ 268,046
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 123,767	\$ -	\$ -	\$ 123,767	\$ 123,767
4.16	Legal Fees (Real estate)	1.00	LS		-	3,713.00	\$ -	\$ -	\$ 3,713	\$ 3,713
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,180,000	\$ -	\$ -	\$ 3,180,000	\$ 3,180,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 34,153,196.04			\$ 3,032,804	\$ -	\$ -	\$ 3,032,804
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 89,349	\$ -	\$ -	\$ 89,349	\$ 89,349
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,926,289	\$ 14,226,390	\$ 4,874,509	\$ 23,027,188

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Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)

EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV

Total: \$ 745,825,447

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 170,749,328	\$ 149,849,551	\$ 99,574,291	\$ 420,173,170
2. TRANSITION STATION	\$ 1,367,680	\$ 1,706,372	\$ 1,640,135	\$ 4,714,187
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 19,395,170	\$ 62,617,544	\$ 19,812,816	\$ 101,825,530
SUBTOTAL (Costs):	\$ 191,512,178	\$ 214,173,467	\$ 121,027,241	\$ 526,712,886
CONTRACTOR MARK-UP (OH&P)	\$ 34,472,192	\$ 38,551,224	\$ 21,784,903	\$ 94,808,320
SUBTOTAL:	\$ 225,984,370	\$ 252,724,691	\$ 142,812,144	\$ 621,521,206
CONTINGENCY ON ENTIRE PROJECT	\$ 45,196,874	\$ 50,544,938	\$ 28,562,429	\$ 124,304,241
TOTAL:	\$ 271,181,244	\$ 303,269,630	\$ 171,374,573	\$ 745,825,447

Description of Work: New Rochelle landing - Hempstead Harbor Landing. Part of any Dunwoodie to Shore/Ruland/EGC 345 kV project segment (Include HDD's to get onshore at both ends of route) 1600 mm2 Tri-Core										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	300,390	FT	\$ 537	\$ 400	\$ 250	\$ 161,309,301	\$ 120,155,904	\$ 75,097,440	\$ 356,562,645
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 15,203,818	\$ 10,135,879	\$ -	\$ 15,203,818	\$ 10,135,879	\$ 25,339,697
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.5	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.7	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.8	Fiber Optic Cable	100,130	FT	\$ 7			\$ 740,661	\$ -	\$ -	\$ 740,661
1.9	Ground Continuity Conductor	100,130	FT	\$ 13			\$ 1,305,594	\$ -	\$ -	\$ 1,305,594
1.10							\$ -	\$ -	\$ -	\$ -
1.11	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.12	HDD along Route	4,342	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,947,200	\$ 13,894,400	\$ 13,894,400	\$ 34,736,000
TOTAL - Submarine cable:							\$ 170,749,328	\$ 149,849,551	\$ 99,574,291	\$ 420,173,170
2. TRANSITION STATION										
2.1	Site Clearing	1.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 16,200	\$ 10,800	\$ 27,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	2,420	CY		24.50	10.50	\$ -	\$ 59,290	\$ 25,410	\$ 84,700
2.4	Site Grading- Excavation for Substation Pad	7,260	CY		9.00	6.00	\$ -	\$ 65,340	\$ 43,560	\$ 108,900
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	3,920	CY		21.00	9.00	\$ -	\$ 82,328.40	\$ 35,283.60	\$ 117,612.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	5,881	CY		2.40	1.60	\$ -	\$ 14,113	\$ 9,409	\$ 23,522
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	3,920	CY	25.00	2.40	1.60	\$ 98,010	\$ 9,409	\$ 6,273	\$ 113,692
2.8	Install substation 8" pad base	7,260	SY	11.00	6.00	4.00	\$ 79,860	\$ 43,560	\$ 29,040	\$ 152,460
2.9	Site Surfacing - Aggregate 6" Thick	7,260	SY	16.50	4.50	3.00	\$ 119,790	\$ 32,670	\$ 21,780	\$ 174,240
2.10	7' Station Fence w/ Barbed Wire & Grounding	1,350	LF	13.85	13.85	6.92	\$ 18,695	\$ 18,695	\$ 9,347	\$ 46,737
2.11	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
2.12	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
2.13	Erosion Control-Silt fence install & remove	2,250	LF	2.41	3.16	0.72	\$ 5,423	\$ 7,110	\$ 1,620	\$ 14,153
2.14	Temporary fencing	1,500	LF	7.50	5.25	2.25	\$ 11,250	\$ 7,875	\$ 3,375	\$ 22,500
2.15	345kV, Cable sealing end - 3 Ph	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.16	345kV, lighting arrester	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.17	345kV, Cable sealing end - 3 Ph	18	EA	8,346.00	5,758.74	3,839.16	\$ 150,228	\$ 103,657	\$ 69,105	\$ 322,990
2.18	345kV, lighting arrester	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
2.19	AL Bus Tubing, 5" SCH 80	630	LF	25.00	184.94	123.29	\$ 15,750	\$ 116,511	\$ 77,674	\$ 209,935
2.20	AL Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	-	-	\$ 836	\$ -	\$ -	\$ 836
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000
2.23	Ground Rod, 3/4" x 15'	54	EA	135.00	67.50	7.50	\$ 7,290	\$ 3,645	\$ 405	\$ 11,340
2.24	Trench Box Shoring (Vault)	12	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 216,949	\$ 325,424	\$ 542,373

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.25	Splice Vault Excavation	7,765	CY		\$ 17.5	\$ 7.5	\$ -	\$ 135,893	\$ 58,240	\$ 194,133
2.26	Splice Vault Supply & Installation	12	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 546,000	\$ 257,400	\$ 600,600	\$ 1,404,000
2.27	Splice Vault Backfill	2,330	CY		\$ 14.0	\$ 6.0	\$ -	\$ 32,614	\$ 13,978	\$ 46,592
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	7,066	CY		\$ 24.5	\$ 10.5	\$ -	\$ 173,128	\$ 74,198	\$ 247,326
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	12	EA			\$ 4,000	\$ -	\$ -	\$ 48,000	\$ 48,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	7,765	CF		\$ 1.0	\$ 0.5	\$ -	\$ 7,765	\$ 3,883	\$ 11,648
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 1,367,680	\$ 1,706,372	\$ 1,640,135	\$ 4,714,187
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 172,117,008	\$ 151,555,924	\$ 101,214,425	\$ 424,887,357
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		4,248,873.57		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		16,995,494.27		\$ -	\$ 16,995,494	\$ -	\$ 16,995,494
3.4	Utility PM and Project Oversight	1	LS		4,248,873.57		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.5	Site Accommodation, Facilities, Storage	1	LS	4,248,873.57			\$ 4,248,874	\$ -	\$ -	\$ 4,248,874
	Engineering									
3.6	Design Engineering	1	LS		\$ 21,244,368		\$ -	\$ 21,244,368	\$ -	\$ 21,244,368
3.7	Surveying/Staking	1	LS		\$ 2,974,211		\$ -	\$ 2,974,211	\$ -	\$ 2,974,211
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 4,248,874		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 1,274,662		\$ -	\$ 1,274,662	\$ -	\$ 1,274,662
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 868,559	\$ -	\$ -	\$ 868,559	\$ 868,559
3.15	Legal Fees (Real estate)	1.00	LS		-	26,056.77	\$ -	\$ -	\$ 26,057	\$ 26,057
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 172,117,008			\$ 15,146,297	\$ -	\$ -	\$ 15,146,297
3.21	Contractor Permits	1	LS		\$ 424,887		\$ -	\$ 424,887	\$ -	\$ 424,887
3.22	Payment & Performance Bond	1	LS			\$ 14,900,000	\$ -	\$ -	\$ 14,900,000	\$ 14,900,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 19,395,170	\$ 62,617,544	\$ 19,812,816	\$ 101,825,530

NEXtera Energy- TO43 Enhanced 1

Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit

Northport-SprainBrook 320KV DC

Total: \$ 528,901,092

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-SprainBrook 345KV/ Ruland-SprainBrook 345KV				
1. SUBMARINE CABLE	\$ 71,948,691	\$ 139,544,959	\$ 90,274,548	\$ 301,768,198
2. TRANSITION STATION	\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 9,363,374	\$ 47,125,551	\$ 14,772,680	\$ 71,261,605
SUBTOTAL (Costs):	\$ 81,418,065	\$ 186,843,391	\$ 105,256,264	\$ 373,517,721
CONTRACTOR MARK-UP (OH&P)	\$ 14,655,252	\$ 33,631,810	\$ 18,946,128	\$ 67,233,190
SUBTOTAL:	\$ 96,073,317	\$ 220,475,201	\$ 124,202,392	\$ 440,750,910
CONTINGENCY ON ENTIRE PROJECT	\$ 19,214,663	\$ 44,095,040	\$ 24,840,478	\$ 88,150,182
TOTAL:	\$ 115,287,981	\$ 264,570,242	\$ 149,042,870	\$ 528,901,092

Description of Work: Northport-New Rochelle landing. Part of Northport to Sprainbrook 320 kV DC project segment, 5000kCMIL, Cu, Single Core, XLPE, submarine cable (25.38 miles)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
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Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-Sprain

1. SUBMARINE CABLE										
1.1	Submarine Cable - 320kV DC, 5000kCMIL, Cu, Single Core, XLPE, Submarine	294,814	FT	\$ 212	\$ 400	\$ 250	\$ 62,500,585	\$ 117,925,632	\$ 73,703,520	\$ 254,129,737
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 14,921,613	\$ 9,947,742	\$ -	\$ 14,921,613	\$ 9,947,742	\$ 24,869,354
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.5	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	294,814	FT	\$ 7			\$ 2,180,740	\$ -	\$ -	\$ 2,180,740
1.8	Ground Continuity Conductor	294,814	FT	\$ 13			\$ 3,844,081	\$ -	\$ -	\$ 3,844,081
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	4,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 3,200,000	\$ 6,400,000	\$ 6,400,000	\$ 16,000,000
TOTAL - Submarine cable:							\$ 71,948,691	\$ 139,544,959	\$ 90,274,548	\$ 301,768,198
2. TRANSITION STATION										
2.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
2.4	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.8	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
2.9	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
2.10	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
2.11	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
2.12	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
2.13	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
2.14	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, lighting arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
2.18	345kV, lighting arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
2.19	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
2.20	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
2.22	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
2.23	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	863	CY		\$ 17.5	\$ 7.5	\$ -	\$ 15,099	\$ 6,471	\$ 21,570
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	259	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,624	\$ 1,553	\$ 5,177
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	785	CY		\$ 24.5	\$ 10.5	\$ -	\$ 19,236	\$ 8,244	\$ 27,481
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	863	CF		\$ 1.0	\$ 0.5	\$ -	\$ 863	\$ 431	\$ 1,294
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 72,054,691	\$ 139,717,840	\$ 90,483,585	\$ 302,256,116
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,022,561.16		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.3	Construction Project Management / Supervision	1	LS		12,090,244.64		\$ -	\$ 12,090,245	\$ -	\$ 12,090,245
3.4	Utility PM and Project Oversight	1	LS		3,022,561.16		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.5	Site Accommodation, Facilities, Storage	1	LS	3,022,561.16			\$ 3,022,561	\$ -	\$ -	\$ 3,022,561
	Engineering									
3.6	Design Engineering	1	LS		\$ 15,112,806		\$ -	\$ 15,112,806	\$ -	\$ 15,112,806
3.7	Surveying/Staking	1	LS		\$ 2,115,793		\$ -	\$ 2,115,793	\$ -	\$ 2,115,793
3.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	2	EA		\$ 80,000		\$ -	\$ 160,000	\$ -	\$ 160,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,022,561		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.11	Environmental-special studies/investigation	1	LS		\$ 870,000		\$ -	\$ 870,000	\$ -	\$ 870,000
3.12	Warranties / LOC's	1	LS		\$ 906,768		\$ -	\$ 906,768	\$ -	\$ 906,768
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 206,485	\$ -	\$ -	\$ 206,485	\$ 206,485
3.15	Legal Fees (Real estate)	1.00	LS		-	6,194.55	\$ -	\$ -	\$ 6,195	\$ 6,195
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 72,054,691			\$ 6,340,813	\$ -	\$ -	\$ 6,340,813
3.21	Contractor Permits	1	LS		\$ 302,256		\$ -	\$ 302,256	\$ -	\$ 302,256
3.22	Payment & Performance Bond	1	LS			\$ 10,560,000	\$ -	\$ -	\$ 10,560,000	\$ 10,560,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,363,374	\$ 47,125,551	\$ 14,772,680	\$ 71,261,605

NEXtera Energy- TO43 Enhanced 1

Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits

(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)

Total: \$ 385,634,343

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,553,664	\$ 12,590,558	\$ 5,026,706	\$ 20,170,928
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 32,756,973	\$ 23,529,781	\$ 14,478,636	\$ 70,765,391
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 63,187,504	\$ 38,177,910	\$ 24,731,740	\$ 126,097,154
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,916,970	\$ 33,123,408	\$ 11,266,787	\$ 55,307,165
SUBTOTAL (Costs):	\$ 109,415,111	\$ 107,421,657	\$ 55,503,869	\$ 272,340,638
CONTRACTOR MARK-UP (OH&P)	\$ 19,694,720	\$ 19,335,898	\$ 9,990,696	\$ 49,021,315
SUBTOTAL:	\$ 129,109,831	\$ 126,757,556	\$ 65,494,565	\$ 321,361,952
CONTINGENCY ON ENTIRE PROJECT	\$ 25,821,966	\$ 25,351,511	\$ 13,098,913	\$ 64,272,390
TOTAL:	\$ 154,931,797	\$ 152,109,067	\$ 78,593,479	\$ 385,634,343

Description of Work: East Garden City - Hempstead Harbor Landing (Shore Road, double circuits). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,147,000	\$ 3,063,000	\$ 10,210,000
1.3	Flaggers	330	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 528,000	\$ 1,584,000	\$ 528,000	\$ 2,640,000
1.4	K Rail / Lane Control / Metal Plates	53,909	LF	\$ 30	\$ 18	\$ 12	\$ 1,617,264	\$ 970,358	\$ 646,906	\$ 3,234,528
1.5	Police Support	13,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,584,000	\$ 356,400	\$ 1,940,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 408,400	\$ 1,225,200	\$ 408,400	\$ 2,042,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,553,664	\$ 12,590,558	\$ 5,026,706	\$ 20,170,928
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-DW -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	10.21	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,427,358	\$ 951,572	\$ 2,378,930
2.2	Formwork in Trench	431,270	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 862,541	\$ 646,906	\$ 215,635	\$ 1,725,082
2.3	Trench Excavation	67,885	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,187,990	\$ 509,139	\$ 1,697,129
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,243	CY	\$ 50	\$ 25	\$ 14	\$ 212,141	\$ 103,949	\$ 59,400	\$ 375,490
2.5	Supply & Install Thermal Backfill -conduit level	35,640	CY	\$ 350	\$ 245	\$ 105	\$ 12,473,897	\$ 8,731,728	\$ 3,742,169	\$ 24,947,795
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,604	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,320,782	\$ 2,075,489	\$ 830,196	\$ 6,226,466
2.8	Conduit 8" SCH 40PVC	431,270	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,334,333	\$ 2,445,303	\$ 1,047,987	\$ 15,827,624
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	215,635	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 759,036	\$ 679,251	\$ 291,108	\$ 1,729,394
2.11	Warning Tape	53,909	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,086	\$ 13,477	\$ 5,391	\$ 26,954
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	9,973	CY		\$ 17.5	\$ 7.5	\$ -	\$ 174,533	\$ 74,800	\$ 249,333
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000
2.15	Splice Vault Backfill	2,992	CY		\$ 14.0	\$ 6.0	\$ -	\$ 41,888	\$ 17,952	\$ 59,840
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	Air Test Ducts	646,906	LF			\$ 0.25	\$ -	\$ -	\$ 161,726	\$ 161,726
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	33,940	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 475,162	\$ 475,162	\$ 237,581	\$ 1,187,905
2.21	PVMT, AGGREGATE, 10", BASE COURSE	9,428	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 210,994	\$ 221,544	\$ 94,948	\$ 527,486
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	166	EA		\$ 400	\$ 1,200	\$ -	\$ 66,416	\$ 199,247	\$ 265,663
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	166	EA		\$ 10	\$ 15	\$ -	\$ 1,660	\$ 2,491	\$ 4,151
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	356	EA		\$ 400	\$ 1,200	\$ -	\$ 142,559	\$ 427,676	\$ 570,235
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 557,466	\$ 371,644	\$ -	\$ 557,466	\$ 371,644	\$ 929,110
2.24	Excess Materials Disposal to Certified Backfill	97,326	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,384,498	\$ 1,021,928	\$ 3,406,425
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	77,858	CF		\$ 1.0	\$ 0.5	\$ -	\$ 77,858	\$ 38,929	\$ 116,788
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 32,756,973	\$ 23,529,781	\$ 14,478,636	\$ 70,765,391
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	113,208	FT	\$ 7	\$ 3	\$ 2	\$ 837,403	\$ 377,052	\$ 251,368	\$ 1,465,823
3.12	Ground Continuity Conductor	113,208	FT	\$ 13	\$ 8	\$ 5	\$ 1,476,125	\$ 852,120	\$ 568,080	\$ 2,896,326
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 63,187,504	\$ 38,177,910	\$ 24,731,740	\$ 126,097,154
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To							\$ 98,498,141	\$ 74,298,250	\$ 44,237,082	\$ 217,033,473
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,556,060	\$ 2,370,707	\$ -	\$ 3,556,060	\$ 2,370,707	\$ 5,926,767
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,170,334.73		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		8,681,338.90		\$ -	\$ 8,681,339	\$ -	\$ 8,681,339
4.4	Utility PM and Project Oversight	1	LS		2,170,334.73		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.5	Site Accommodation, Facilities, Storage	1	LS	2,170,334.73			\$ 2,170,335	\$ -	\$ -	\$ 2,170,335
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,851,674	\$ -	\$ -	\$ 10,851,674	\$ -	\$ 10,851,674
4.7	LiDAR /GPR	1.0	LS		\$ 390,660	\$ 260,440	\$ -	\$ 390,660	\$ 260,440	\$ 651,100
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 911,541	\$ 607,694	\$ -	\$ 911,541	\$ 607,694	\$ 1,519,234
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,170,335		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 651,100		\$ -	\$ 651,100	\$ -	\$ 651,100
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 88,246	\$ -	\$ -	\$ 88,246	\$ 88,246
4.16	Legal Fees (Real estate)	1.00	LS		-	2,647.38	\$ -	\$ -	\$ 2,647	\$ 2,647
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,700,000	\$ -	\$ -	\$ 7,700,000	\$ 7,700,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 98,498,141.33			\$ 8,746,635	\$ -	\$ -	\$ 8,746,635
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 217,033	\$ -	\$ -	\$ 217,033	\$ 217,033
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,916,970	\$ 33,123,408	\$ 11,266,787	\$ 55,307,165

NEXtera Energy- TO43 Enhanced 1

Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit

(Ruland To Sprain Brook 345 kV)

Total: \$ 349,868,481

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274
SUBTOTAL (Costs):	\$ 90,427,881	\$ 103,561,178	\$ 53,093,201	\$ 247,082,261
CONTRACTOR MARK-UP (OH&P)	\$ 16,277,019	\$ 18,641,012	\$ 9,556,776	\$ 44,474,807
SUBTOTAL:	\$ 106,704,900	\$ 122,202,190	\$ 62,649,977	\$ 291,557,067
CONTINGENCY ON ENTIRE PROJECT	\$ 21,340,980	\$ 24,440,438	\$ 12,529,995	\$ 58,311,413
TOTAL:	\$ 128,045,880	\$ 146,642,628	\$ 75,179,973	\$ 349,868,481

Description of Work: Ruland - Hempstead Harbor Landing (Shore Road, single circuit). 5000 kcmil copper XLPE, single cable per phase..										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	15.89	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 11,120,200	\$ 4,765,800	\$ 15,886,000
1.3	Flaggers	500	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 800,000	\$ 2,400,000	\$ 800,000	\$ 4,000,000
1.4	K Rail / Lane Control / Metal Plates	83,878	LF	\$ 30	\$ 18	\$ 12	\$ 2,516,342	\$ 1,509,805	\$ 1,006,537	\$ 5,032,685
1.5	Police Support	20,000.0	HR		\$ 120	\$ 27	\$ -	\$ 2,400,000	\$ 540,000	\$ 2,940,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	15.89	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 635,440	\$ 1,906,320	\$ 635,440	\$ 3,177,200
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	15.89	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,220,863	\$ 1,480,575	\$ 3,701,438
2.2	Formwork in Trench	643,225	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,286,449	\$ 964,837	\$ 321,612	\$ 2,572,899
2.3	Trench Excavation	53,602	CY		\$ 17.5	\$ 7.5	\$ -	\$ 938,036	\$ 402,015	\$ 1,340,051
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,350	SF	\$ 50	\$ 25	\$ 14	\$ 167,506	\$ 82,078	\$ 46,902	\$ 296,486
2.5	Supply & Install Thermal Backfill	28,141	CY	\$ 350	\$ 245	\$ 105	\$ 9,849,377	\$ 6,894,564	\$ 2,954,813	\$ 19,698,755
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,101	CY	\$ 200	\$ 125	\$ 50	\$ 2,620,247	\$ 1,637,654	\$ 655,062	\$ 4,912,963
2.9	Conduit 8" SCH 40PVC	335,512	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 9,595,652	\$ 1,902,355	\$ 815,295	\$ 12,313,302
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	167,756	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 590,502	\$ 528,432	\$ 226,471	\$ 1,345,404
2.12	Warning Tape	167,756	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 25,163	\$ 41,939	\$ 16,776	\$ 83,878
2.13	Trench Box Shoring (Vault)	49	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 885,876	\$ 1,328,814	\$ 2,214,689
2.14	Splice Vault Excavation	8,145	CY		\$ 17.5	\$ 7.5	\$ -	\$ 142,536	\$ 61,087	\$ 203,622
2.15	Splice Vault Supply & Installation	49	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,715,000	\$ 808,500	\$ 1,886,500	\$ 4,410,000
2.16	Splice Vault Backfill	2,443	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,209	\$ 14,661	\$ 48,869
2.17	Jack and Bore along Route	805	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 644,000	\$ 1,288,000	\$ 1,288,000	\$ 3,220,000
2.18	HDD along Route	1,200	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 960,000	\$ 1,920,000	\$ 1,920,000	\$ 4,800,000
2.19	Air Test Ducts	503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LiDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 43,680	\$ 29,120	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXtera Energy- TO43 Enhanced 1

Comp 8C - Rebuld: East Garden City - Newbridge 345kv Onshore UG Cables -Double circuits

Total: \$ 133,317,472

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 8C - Rebuld: East Garden City - Newbridge 345kv Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576
SUBTOTAL (Costs):	\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757
CONTRACTOR MARK-UP (OH&P)	\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136
SUBTOTAL:	\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893
CONTINGENCY ON ENTIRE PROJECT	\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579
TOTAL:	\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472

Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuld: East Garden City - Newbridge 345kv Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversite	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LiDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXtera Energy- TO43 Enhanced 1

Comp 10A - East Graden City To Valley Stream 345kv Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Graden City To Valley Stream 345kv Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,216
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Graden City To Valley Stream 345kv Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	\$ -	\$ 1,492	\$ 2,239	\$ 3,731
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LiDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

NEXtera Energy- TO43 Enhanced 1

Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit

(Pilgram to Northport kV)

Total: \$ 165,653,108

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365
SUBTOTAL (Costs):	\$ 42,682,442	\$ 49,673,108	\$ 24,631,109	\$ 116,986,658
CONTRACTOR MARK-UP (OH&P)	\$ 7,682,840	\$ 8,941,159	\$ 4,433,600	\$ 21,057,599
SUBTOTAL:	\$ 50,365,281	\$ 58,614,267	\$ 29,064,708	\$ 138,044,257
CONTINGENCY ON ENTIRE PROJECT	\$ 10,073,056	\$ 11,722,853	\$ 5,812,942	\$ 27,608,851
TOTAL:	\$ 60,438,338	\$ 70,337,121	\$ 34,877,650	\$ 165,653,108

Description of Work: Ruland - 138kV (399/567/900 MVA) 5000 kcmil copper XLPE, single cable per phase (8.34 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.34	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,838,000	\$ 2,502,000	\$ 8,340,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,035	LF	\$ 30	\$ 18	\$ 12	\$ 1,321,056	\$ 792,634	\$ 528,422	\$ 2,642,112
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.34	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 333,600	\$ 1,000,800	\$ 333,600	\$ 1,668,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.34	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,165,932	\$ 777,288	\$ 1,943,220
2.2	Formwork in Trench	346,914	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 693,827	\$ 520,370	\$ 173,457	\$ 1,387,654
2.3	Trench Excavation	28,909	CY		\$ 17.5	\$ 7.5	\$ -	\$ 505,916	\$ 216,821	\$ 722,737
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,807	SF	\$ 50	\$ 25	\$ 14	\$ 90,342	\$ 44,268	\$ 25,296	\$ 159,905
2.5	Supply & Install Thermal Backfill	15,177	CY	\$ 350	\$ 245	\$ 105	\$ 5,312,115	\$ 3,718,480	\$ 1,593,634	\$ 10,624,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,066	CY	\$ 200	\$ 125	\$ 50	\$ 1,413,191	\$ 883,244	\$ 353,298	\$ 2,649,733
2.9	Conduit 8" SCH 40PVC	176,141	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 5,037,627	\$ 998,718	\$ 428,022	\$ 6,464,367
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	88,070	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 310,008	\$ 277,422	\$ 118,895	\$ 706,325
2.12	Warning Tape	88,070	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,211	\$ 22,018	\$ 8,807	\$ 44,035
2.13	Trench Box Shoring (Vault)	24	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 433,898	\$ 650,847	\$ 1,084,746
2.14	Splice Vault Excavation	3,285	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,493	\$ 24,640	\$ 82,133
2.15	Splice Vault Supply & Installation	24	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 840,000	\$ 396,000	\$ 924,000	\$ 2,160,000
2.16	Splice Vault Backfill	986	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,798	\$ 5,914	\$ 19,712
2.17	Jack and Bore along Route	95	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 76,000	\$ 152,000	\$ 152,000	\$ 380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	264,211	LF			\$ 0.25	\$ -	\$ -	\$ 66,053	\$ 66,053

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,481	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 230,729	\$ 230,729	\$ 115,364	\$ 576,822
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,578	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 102,455	\$ 107,577	\$ 46,105	\$ 256,136
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,264	\$ 84,791	\$ 113,055
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	71	EA		\$ 10	\$ 15	\$ -	\$ 707	\$ 1,060	\$ 1,766
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,710	\$ 182,130	\$ 242,840
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	40,572	CY		\$ 24.5	\$ 10.5	\$ -	\$ 994,013	\$ 426,006	\$ 1,420,019
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	24	EA			\$ 4,000	\$ -	\$ -	\$ 96,000	\$ 96,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	32,195	CF		\$ 1.0	\$ 0.5	\$ -	\$ 32,195	\$ 16,097	\$ 48,292
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	138,711	FT	\$ 145	\$ 87	\$ 58	\$ 20,113,078	\$ 12,067,847	\$ 8,045,231	\$ 40,226,155
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	72	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 424,656	\$ 708,947	\$ 202,556	\$ 1,336,159
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	24	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 639,816	\$ 383,890	\$ 255,926	\$ 1,279,632
3.11	Fiber Optic Cable	46,237	FT	\$ 7	\$ 3	\$ 2	\$ 342,015	\$ 153,997	\$ 102,665	\$ 598,676
3.12	Ground Continuity Conductor	46,237	FT	\$ 13	\$ 8	\$ 5	\$ 602,884	\$ 348,026	\$ 232,017	\$ 1,182,926
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 38,346,592	\$ 35,001,236	\$ 19,719,466	\$ 93,067,293
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,641,621	\$ 1,094,414	\$ -	\$ 1,641,621	\$ 1,094,414	\$ 2,736,035
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.3	Construction Project Management / Supervision	1	LS		3,722,691.74		\$ -	\$ 3,722,692	\$ -	\$ 3,722,692
4.4	Utility PM and Project Oversight	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.5	Site Accommodation, Facilities, Storage	1	LS	930,672.93			\$ 930,673	\$ -	\$ -	\$ 930,673
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,653,365	\$ -	\$ -	\$ 4,653,365	\$ -	\$ 4,653,365
4.7	LiDAR /GPR	1.0	LS		\$ 167,521	\$ 111,681	\$ -	\$ 167,521	\$ 111,681	\$ 279,202
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 390,883	\$ 260,588	\$ -	\$ 390,883	\$ 260,588	\$ 651,471
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 930,673		\$ -	\$ 930,673	\$ -	\$ 930,673
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 279,202		\$ -	\$ 279,202	\$ -	\$ 279,202
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 34,478	\$ -	\$ -	\$ 34,478	\$ 34,478
4.16	Legal Fees (Real estate)	1.00	LS		-	1,034.34	\$ -	\$ -	\$ 1,034	\$ 1,034
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,300,000	\$ -	\$ -	\$ 3,300,000	\$ 3,300,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 38,346,591.60			\$ 3,405,177	\$ -	\$ -	\$ 3,405,177
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 93,067	\$ -	\$ -	\$ 93,067	\$ 93,067
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365

NEXtera Energy- TO43 Enhanced 1

Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXTera Energy- TO43 Enhanced 1

Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXTera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO37 Core 2

Comp 249 - Jamaica To Farragut 345kv Onshore UG Cables -Single circuit

(EGC-Farragut 345kv)

Total: \$ 235,279,477

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 249 - Jamaica To Farragut 345kv Onshore UG Cables -Single circuit(EGC-Farragut 345kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,686,464	\$ 13,140,838	\$ 5,290,426	\$ 21,117,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 18,736,904	\$ 14,861,575	\$ 9,340,154	\$ 42,938,633
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 34,016,741	\$ 20,570,670	\$ 13,308,667	\$ 67,896,078
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,242,606	\$ 20,847,264	\$ 7,115,514	\$ 34,205,384
SUBTOTAL (Costs):	\$ 61,682,715	\$ 69,420,347	\$ 35,054,761	\$ 166,157,823
CONTRACTOR MARK-UP (OH&P)	\$ 11,102,889	\$ 12,495,662	\$ 6,309,857	\$ 29,908,408
SUBTOTAL:	\$ 72,785,604	\$ 81,916,010	\$ 41,364,618	\$ 196,066,231
CONTINGENCY ON ENTIRE PROJECT	\$ 14,557,121	\$ 16,383,202	\$ 8,272,924	\$ 39,213,246
TOTAL:	\$ 87,342,724	\$ 98,299,212	\$ 49,637,541	\$ 235,279,477

Description of Work: Construct a new Farragut 345kv GIS substation and connect back to the existing Farragut 345kv, further interconnecting the Farragut East and West ring buses.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 249 - Jamaica To Farragut 345kv Onshore UG Cables -Single circuit(EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.96	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,672,000	\$ 3,288,000	\$ 10,960,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	57,869	LF	\$ 30	\$ 18	\$ 12	\$ 1,736,064	\$ 1,041,638	\$ 694,426	\$ 3,472,128
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	10.96	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 438,400	\$ 1,315,200	\$ 438,400	\$ 2,192,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,686,464	\$ 13,140,838	\$ 5,290,426	\$ 21,117,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.96	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,532,208	\$ 1,021,472	\$ 2,553,680
2.2	Formwork in Trench	452,030	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 904,061	\$ 678,046	\$ 226,015	\$ 1,808,122
2.3	Trench Excavation	37,669	CY		\$ 17.5	\$ 7.5	\$ -	\$ 659,211	\$ 282,519	\$ 941,730
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,354	SF	\$ 50	\$ 25	\$ 14	\$ 117,716	\$ 57,681	\$ 32,961	\$ 208,358
2.5	Supply & Install Thermal Backfill	19,776	CY	\$ 350	\$ 245	\$ 105	\$ 6,921,716	\$ 4,845,201	\$ 2,076,515	\$ 13,843,431
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,207	CY	\$ 200	\$ 125	\$ 50	\$ 1,841,396	\$ 1,150,873	\$ 460,349	\$ 3,452,618
2.9	Conduit 8" SCH 40PVC	231,475	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 6,620,191	\$ 1,312,464	\$ 562,485	\$ 8,495,140
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	115,738	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 407,396	\$ 364,573	\$ 156,246	\$ 928,216
2.12	Warning Tape	115,738	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 17,361	\$ 28,934	\$ 11,574	\$ 57,869
2.13	Trench Box Shoring (Vault)	34	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 614,689	\$ 922,034	\$ 1,536,723
2.14	Splice Vault Excavation	5,652	CY		\$ 17.5	\$ 7.5	\$ -	\$ 98,902	\$ 42,387	\$ 141,289
2.15	Splice Vault Supply & Installation	34	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,190,000	\$ 561,000	\$ 1,309,000	\$ 3,060,000
2.16	Splice Vault Backfill	1,695	CY		\$ 14.0	\$ 6.0	\$ -	\$ 23,737	\$ 10,173	\$ 33,909
2.17	Jack and Bore along Route	345	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 276,000	\$ 552,000	\$ 552,000	\$ 1,380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	347,213	LF			\$ 0.25	\$ -	\$ -	\$ 86,803	\$ 86,803
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,817	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 305,439	\$ 305,439	\$ 152,719	\$ 763,596
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,060	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 135,629	\$ 142,411	\$ 61,033	\$ 339,073
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	92	EA		\$ 400	\$ 1,200	\$ -	\$ 36,828	\$ 110,484	\$ 147,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	92	EA		\$ 10	\$ 15	\$ -	\$ 921	\$ 1,381	\$ 2,302
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	198	EA		\$ 400	\$ 1,200	\$ -	\$ 79,105	\$ 237,316	\$ 316,421
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	54,113	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,325,765	\$ 568,185	\$ 1,893,951
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	34	EA			\$ 4,000	\$ -	\$ -	\$ 136,000	\$ 136,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	43,321	CF		\$ 1.0	\$ 0.5	\$ -	\$ 43,321	\$ 21,660	\$ 64,981
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 18,736,904	\$ 14,861,575	\$ 9,340,154	\$ 42,938,633
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	182,287	FT	\$ 167	\$ 100	\$ 67	\$ 30,441,882	\$ 18,265,129	\$ 12,176,753	\$ 60,883,764
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	102	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,195,644	\$ 1,004,341	\$ 286,955	\$ 2,486,940
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	34	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 970,647	\$ 582,388	\$ 388,259	\$ 1,941,295
3.11	Fiber Optic Cable	60,762	FT	\$ 7	\$ 3	\$ 2	\$ 449,458	\$ 202,375	\$ 134,916	\$ 786,749
3.12	Ground Continuity Conductor	60,762	FT	\$ 13	\$ 8	\$ 5	\$ 792,279	\$ 457,357	\$ 304,905	\$ 1,554,541
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 34,016,741	\$ 20,570,670	\$ 13,308,667	\$ 67,896,078
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 55,440,109	\$ 48,573,083	\$ 27,939,247	\$ 131,952,439
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,295,370	\$ 1,530,247	\$ -	\$ 2,295,370	\$ 1,530,247	\$ 3,825,616
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,319,524.39		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.3	Construction Project Management / Supervision	1	LS		5,278,097.54		\$ -	\$ 5,278,098	\$ -	\$ 5,278,098
4.4	Utility PM and Project Oversight	1	LS		1,319,524.39		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.5	Site Accommodation, Facilities, Storage	1	LS	1,319,524.39			\$ 1,319,524	\$ -	\$ -	\$ 1,319,524
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,597,622	\$ -	\$ -	\$ 6,597,622	\$ -	\$ 6,597,622
4.7	LiDAR /GPR	1.0	LS		\$ 237,514	\$ 158,343	\$ -	\$ 237,514	\$ 158,343	\$ 395,857
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 554,200	\$ 369,467	\$ -	\$ 554,200	\$ 369,467	\$ 923,667
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,319,524		\$ -	\$ 1,319,524	\$ -	\$ 1,319,524
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 395,857		\$ -	\$ 395,857	\$ -	\$ 395,857
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 199,500	\$ -	\$ -	\$ 199,500	\$ 199,500
4.16	Legal Fees (Real estate)	1.00	LS		-	5,985.00	\$ -	\$ -	\$ 5,985	\$ 5,985
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,700,000	\$ -	\$ -	\$ 4,700,000	\$ 4,700,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 55,440,108.80			\$ 4,923,082	\$ -	\$ -	\$ 4,923,082
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 131,952	\$ -	\$ -	\$ 131,952	\$ 131,952
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,242,606	\$ 20,847,264	\$ 7,115,514	\$ 34,205,384

NEXtera Energy- TO37 Core 2

Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit

(EGC-Jamaica 138kv & EGC-Farragut 345kv)

Total: \$ 417,671,578

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,843,456	\$ 13,949,314	\$ 5,610,142	\$ 22,402,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 37,471,503	\$ 27,164,952	\$ 17,236,589	\$ 81,873,044
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 65,241,174	\$ 39,963,042	\$ 25,809,297	\$ 131,013,513
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,726,279	\$ 35,817,102	\$ 12,132,954	\$ 59,676,335
SUBTOTAL (Costs):	\$ 117,282,412	\$ 116,894,409	\$ 60,788,982	\$ 294,965,804
CONTRACTOR MARK-UP (OH&P)	\$ 21,110,834	\$ 21,040,994	\$ 10,942,017	\$ 53,093,845
SUBTOTAL:	\$ 138,393,246	\$ 137,935,403	\$ 71,730,999	\$ 348,059,648
CONTINGENCY ON ENTIRE PROJECT	\$ 27,678,649	\$ 27,587,081	\$ 14,346,200	\$ 69,611,930
TOTAL:	\$ 166,071,896	\$ 165,522,484	\$ 86,077,199	\$ 417,671,578

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	340	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 544,000	\$ 1,632,000	\$ 544,000	\$ 2,720,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	13,600.0	HR		\$ 120	\$ 27	\$ -	\$ 1,632,000	\$ 367,200	\$ 1,999,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,843,456	\$ 13,949,314	\$ 5,610,142	\$ 22,402,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	12	Mile		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	466,058	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 932,115	\$ 699,086	\$ 233,029	\$ 1,864,230
Double Circuit Conduit Trench (EGC-JA 138KV & EGC-New Farragut 345kv)										
2.3	Trench Excavation	73,361	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,283,816	\$ 550,207	\$ 1,834,023
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,585	SF	\$ 50	\$ 25	\$ 14	\$ 229,253	\$ 112,334	\$ 64,191	\$ 405,778
2.5	Supply & Install Thermal Backfill	38,514	CY	\$ 350	\$ 245	\$ 105	\$ 13,480,069	\$ 9,436,048	\$ 4,044,021	\$ 26,960,138
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	17,943	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,588,644	\$ 2,242,902	\$ 897,161	\$ 6,728,707
2.9	Conduit 8" SCH 40PVC	489,562	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 14,001,462	\$ 2,775,814	\$ 1,189,635	\$ 17,966,911
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	244,781	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 861,628	\$ 771,060	\$ 330,454	\$ 1,963,142
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 30,598	\$ 12,239	\$ 61,195
Single Circuit Conduit Trench										
2.13	Trench Excavation	1,792	CY		\$ 17.5	\$ 7.5	\$ -	\$ 31,360	\$ 13,440	\$ 44,800
2.14	Supply & Install 6" Sand Bedding for direct bury conduits	112	SF	\$ 50	\$ 25	\$ 14	\$ 5,600	\$ 2,744	\$ 1,568	\$ 9,912
2.15	Supply & Install Thermal Backfill	896	CY	\$ 350	\$ 245	\$ 105	\$ 313,600	\$ 219,520	\$ 94,080	\$ 627,200
2.16	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.17	Native Backfill -direct bury conduits sys Trench	1,114	CY		\$ 14.0	\$ 6.0	\$ -	\$ 15,596	\$ 6,684	\$ 22,281
2.18	Supply & Install Ductbank Concrete	438	CY	\$ 200	\$ 125	\$ 50	\$ 87,599	\$ 54,749	\$ 21,900	\$ 164,248
2.19	Conduit 8" SCH 40PVC	10,752	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 307,507	\$ 60,964	\$ 26,127	\$ 394,598

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.21	Conduit 2" SCH 40PVC	5,376	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 18,924	\$ 16,934	\$ 7,258	\$ 43,116
2.22	Warning Tape	2,688	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 403	\$ 672	\$ 269	\$ 1,344
138 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	36	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 650,847	\$ 976,271	\$ 1,627,119
2.13	Splice Vault Excavation	4,928	CY		\$ 17.5	\$ 7.5	\$ -	\$ 86,240	\$ 36,960	\$ 123,200
2.14	Splice Vault Supply & Installation	36	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,260,000	\$ 594,000	\$ 1,386,000	\$ 3,240,000
2.15	Splice Vault Backfill	1,478	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,698	\$ 8,870	\$ 29,568
345 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.13	Splice Vault Excavation	5,818	CY		\$ 17.5	\$ 7.5	\$ -	\$ 101,811	\$ 43,633	\$ 145,444
2.14	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.15	Splice Vault Backfill	1,745	CY		\$ 14.0	\$ 6.0	\$ -	\$ 24,435	\$ 10,472	\$ 34,907
2.16	Jack and Bore along Route	250	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 400,000	\$ 800,000	\$ 800,000	\$ 2,000,000
2.17	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	750,470	LF			\$ 0.25	\$ -	\$ -	\$ 187,618	\$ 187,618
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	36,670	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 513,377	\$ 513,377	\$ 256,689	\$ 1,283,443
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,186	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 227,964	\$ 239,362	\$ 102,584	\$ 569,910
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	184	EA		\$ 400	\$ 1,200	\$ -	\$ 73,525	\$ 220,575	\$ 294,099
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	184	EA		\$ 10	\$ 15	\$ -	\$ 1,838	\$ 2,757	\$ 4,595
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	394	EA		\$ 400	\$ 1,200	\$ -	\$ 157,642	\$ 472,926	\$ 630,568
2.23	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 632,814	\$ 421,876	\$ -	\$ 632,814	\$ 421,876	\$ 1,054,690
2.24	Excess Materials Disposal to Certified Backfill	106,029	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,597,716	\$ 1,113,307	\$ 3,711,023
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	71	EA			\$ 4,000	\$ -	\$ -	\$ 284,000	\$ 284,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	85,899	CF		\$ 1.0	\$ 0.5	\$ -	\$ 85,899	\$ 42,949	\$ 128,848
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 37,471,503	\$ 27,164,952	\$ 17,236,589	\$ 81,873,044
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	108	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 636,984	\$ 1,063,420	\$ 303,834	\$ 2,004,238
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	184,297	FT	\$ 167	\$ 100	\$ 67	\$ 30,777,607	\$ 18,466,564	\$ 12,311,043	\$ 61,555,215
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	105	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,230,810	\$ 1,033,880	\$ 295,394	\$ 2,560,085
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	3	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 83,415	\$ 29,539	\$ 8,440	\$ 121,394
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking (138kv)	36	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 959,724	\$ 575,834	\$ 383,890	\$ 1,919,448
3.10	Link Box & MH racking (345kv)	35	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 999,196	\$ 599,517	\$ 399,678	\$ 1,998,392
3.10	Fiber Optic Cable	125,687	FT	\$ 7	\$ 3	\$ 2	\$ 929,709	\$ 418,614	\$ 279,076	\$ 1,627,399
3.11	Ground Continuity Conductor	125,687	FT	\$ 13	\$ 8	\$ 5	\$ 1,638,837	\$ 946,048	\$ 630,699	\$ 3,215,584
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 65,241,174	\$ 39,963,042	\$ 25,809,297	\$ 131,013,513
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double & Single circuit(EGC-Jamaica 138kv & EGC-Farragut 345k							\$ 105,556,133	\$ 81,077,308	\$ 48,656,028	\$ 235,289,469
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,892,000	\$ 2,594,667	\$ -	\$ 3,892,000	\$ 2,594,667	\$ 6,486,667
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,352,894.69		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.3	Construction Project Management / Supervision	1	LS		9,411,578.75		\$ -	\$ 9,411,579	\$ -	\$ 9,411,579
4.4	Utility PM and Project Oversite	1	LS		2,352,894.69		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.5	Site Accommodation, Facilities, Storage	1	LS	2,352,894.69			\$ 2,352,895	\$ -	\$ -	\$ 2,352,895
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,764,473	\$ -	\$ -	\$ 11,764,473	\$ -	\$ 11,764,473
4.7	LiDAR /GPR	1.0	LS		\$ 423,521	\$ 282,347	\$ -	\$ 423,521	\$ 282,347	\$ 705,868
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 988,216	\$ 658,811	\$ -	\$ 988,216	\$ 658,811	\$ 1,647,026
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,352,895		\$ -	\$ 2,352,895	\$ -	\$ 2,352,895
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 705,868		\$ -	\$ 705,868	\$ -	\$ 705,868

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 8,340,000	\$ -	\$ -	\$ 8,340,000	\$ 8,340,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 105,556,132.87			\$ 9,373,385	\$ -	\$ -	\$ 9,373,385
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 235,289	\$ -	\$ -	\$ 235,289	\$ 235,289
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,726,279	\$ 35,817,102	\$ 12,132,954	\$ 59,676,335

NEXtera Energy- TO43 Enhanced 1

Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit

Total: \$ 5,354,910

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351
SUBTOTAL (Costs):	\$ 1,083,440	\$ 2,001,924	\$ 696,353	\$ 3,781,716
CONTRACTOR MARK-UP (OH&P)	\$ 195,019	\$ 360,346	\$ 125,343	\$ 680,709
SUBTOTAL:	\$ 1,278,459	\$ 2,362,270	\$ 821,696	\$ 4,462,425
CONTINGENCY ON ENTIRE PROJECT	\$ 255,692	\$ 472,454	\$ 164,339	\$ 892,485
TOTAL:	\$ 1,534,151	\$ 2,834,724	\$ 986,035	\$ 5,354,910

Description of Work: Rebuild 0.2 mile of UG line (trench, conduits and cable), single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.20	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	1,056	LF	\$ 30	\$ 18	\$ 12	\$ 31,680	\$ 19,008	\$ 12,672	\$ 63,360
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	0.20	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 8,000	\$ 24,000	\$ 8,000	\$ 40,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 103,680	\$ 467,008	\$ 139,872	\$ 710,560
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.20	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 27,960	\$ 18,640	\$ 46,600
2.2	Formwork in Trench	8,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 16,512	\$ 12,384	\$ 4,128	\$ 33,024
2.3	Trench Excavation	688	CY		\$ 17.5	\$ 7.5	\$ -	\$ 12,040	\$ 5,160	\$ 17,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	43	SF	\$ 50	\$ 25	\$ 14	\$ 2,150	\$ 1,054	\$ 602	\$ 3,806
2.5	Supply & Install Thermal Backfill	361	CY	\$ 350	\$ 245	\$ 105	\$ 126,420	\$ 88,494	\$ 37,926	\$ 252,840
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	168	CY	\$ 200	\$ 125	\$ 50	\$ 33,632	\$ 21,020	\$ 8,408	\$ 63,060
2.9	Conduit 8" SCH 40PVC	4,224	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 120,806	\$ 23,950	\$ 10,264	\$ 155,021
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	2,112	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 7,434	\$ 6,653	\$ 2,851	\$ 16,938
2.12	Warning Tape	2,112	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 317	\$ 528	\$ 211	\$ 1,056
2.13	Trench Box Shoring (Vault)	1	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 18,079	\$ 27,119	\$ 45,198
2.14	Splice Vault Excavation	137	CY		\$ 17.5	\$ 7.5	\$ -	\$ 2,396	\$ 1,027	\$ 3,422
2.15	Splice Vault Supply & Installation	1	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 35,000	\$ 16,500	\$ 38,500	\$ 90,000
2.16	Splice Vault Backfill	41	CY		\$ 14.0	\$ 6.0	\$ -	\$ 575	\$ 246	\$ 821
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	6,336	LF			\$ 0.25	\$ -	\$ -	\$ 1,584	\$ 1,584

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 5,696	\$ 5,696	\$ 2,848	\$ 14,241
2.21	PVMT, AGGREGATE, 10" , BASE COURSE	113	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 2,529	\$ 2,656	\$ 1,138	\$ 6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$ 400	\$ 1,200	\$ -	\$ 673	\$ 2,018	\$ 2,691
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$ 10	\$ 15	\$ -	\$ 17	\$ 25	\$ 42
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LiDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

NEXTera Energy- TO43 Enhanced 1

Other Comp. 138kV Upgrades

Total: \$ 15,958,202

Other Comp. 138kV Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Comp. 138kV Upgrades				
	\$ -	\$ -	\$ -	\$ -
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 421,872	\$ 2,676,720	\$ 416,325	\$ 3,514,917
CONTRACTOR MARK-UP (OH&P)	\$ 773,887	\$ 830,785	\$ 423,914	\$ 2,028,585
SUBTOTAL:	\$ 5,073,259	\$ 5,446,255	\$ 2,778,989	\$ 13,298,502
CONTINGENCY ON ENTIRE PROJECT	\$ 1,014,652	\$ 1,089,251	\$ 555,798	\$ 2,659,700
TOTAL:	\$ 6,087,911	\$ 6,535,506	\$ 3,334,786	\$ 15,958,202

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1.1	CT Replacement		EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ -	\$ -	\$ -	\$ -
1.2	CT Replacement-foundation		CY	\$ 704	\$ 804	\$ 503	\$ -	\$ -	\$ -	\$ -
1.3	CT Replacement-structure		EA	\$ 1,684	\$ 1,178	\$ 505	\$ -	\$ -	\$ -	\$ -
							\$ -		\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 3,877,500.00	\$ 1,938,750.00	\$ 1,938,750.00	\$ 7,755,000.00

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 116,325	\$ 77,550	\$ -	\$ 116,325	\$ 77,550	\$ 193,875
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		77,550.00		\$ -	\$ 77,550	\$ -	\$ 77,550
4.3	Construction Project Management / Supervision	1	LS		310,200.00		\$ -	\$ 310,200	\$ -	\$ 310,200
4.4	Utility PM and Project Oversight	1	LS		77,550.00		\$ -	\$ 77,550	\$ -	\$ 77,550
4.5	Site Accommodation, Facilities, Storage	1	LS	77,550.00			\$ 77,550	\$ -	\$ -	\$ 77,550
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 387,750	\$ -	\$ -	\$ 387,750	\$ -	\$ 387,750
4.7	LiDAR	1.00	LS		\$ 13,959	\$ 9,306	\$ -	\$ 13,959	\$ 9,306	\$ 23,265
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 32,571	\$ 21,714	\$ -	\$ 32,571	\$ 21,714	\$ 54,285
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 77,550		\$ -	\$ 77,550	\$ -	\$ 77,550
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 23,265		\$ -	\$ 23,265	\$ -	\$ 23,265
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 3,877,500.00			\$ 344,322	\$ -	\$ -	\$ 344,322
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 7,755	\$ -	\$ -	\$ 7,755	\$ 7,755
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 421,872	\$ 2,676,720	\$ 416,325	\$ 3,514,917

NEXtera Energy- TO43 Enhanced 1

Comp 121 - Barrett To Barrett Landing Onshore 320kV DC UG Cables - Single circuit

(New Barrett HVDC-New Buchana HVDC 320KV)

Total: \$ 72,059,411

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 121 - Barrett To Barrett Landing Onshore 320kV DC UG Cables - Single circuit(New Barrett HVDC-New Buchana HVDC 320KV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 786,944	\$ 3,891,526	\$ 1,554,618	\$ 6,233,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 6,366,774	\$ 7,679,273	\$ 6,193,125	\$ 20,239,172
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 7,043,655	\$ 4,061,941	\$ 2,610,433	\$ 13,716,029
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,662,610	\$ 6,494,937	\$ 2,543,579	\$ 10,701,125
SUBTOTAL (Costs):	\$ 15,859,983	\$ 22,127,677	\$ 12,901,755	\$ 50,889,415
CONTRACTOR MARK-UP (OH&P)	\$ 2,854,797	\$ 3,982,982	\$ 2,322,316	\$ 9,160,095
SUBTOTAL:	\$ 18,714,780	\$ 26,110,659	\$ 15,224,071	\$ 60,049,509
CONTINGENCY ON ENTIRE PROJECT	\$ 3,742,956	\$ 5,222,132	\$ 3,044,814	\$ 12,009,902
TOTAL:	\$ 22,457,736	\$ 31,332,790	\$ 18,268,885	\$ 72,059,411

Description of Work: Part of New Barrett OSW - New Barrett HVDC 320KV, symmetrical monopole 1200MW HVDC subsea cable

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 121 - Barrett To Barrett Landing Onshore 320kV DC UG Cables - Single circuit(New Barrett HVDC-New Buchana HVDC 320KV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	3.16	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 2,212,000	\$ 948,000	\$ 3,160,000
1.3	Flaggers	100	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 160,000	\$ 480,000	\$ 160,000	\$ 800,000
1.4	K Rail / Lane Control / Metal Plates	16,685	LF	\$ 30	\$ 18	\$ 12	\$ 500,544	\$ 300,326	\$ 200,218	\$ 1,001,088
1.5	Police Support	4,000.0	HR		\$ 120	\$ 27	\$ -	\$ 480,000	\$ 108,000	\$ 588,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	3.16	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 126,400	\$ 379,200	\$ 126,400	\$ 632,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 786,944	\$ 3,891,526	\$ 1,554,618	\$ 6,233,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	3	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 441,768	\$ 294,512	\$ 736,280
2.2	Formwork in Trench	113,558	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 227,117	\$ 170,338	\$ 56,779	\$ 454,234
2.3	Trench Excavation	9,463	CY		\$ 17.5	\$ 7.5	\$ -	\$ 165,606	\$ 70,974	\$ 236,580
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	591	SF	\$ 50	\$ 25	\$ 14	\$ 29,573	\$ 14,491	\$ 8,280	\$ 52,343
2.5	Supply & Install Thermal Backfill	4,968	CY	\$ 350	\$ 245	\$ 105	\$ 1,738,863	\$ 1,217,204	\$ 521,659	\$ 3,477,726
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	2,490	CY	\$ 200	\$ 125	\$ 50	\$ 497,922	\$ 311,201	\$ 124,481	\$ 933,604
2.9	Conduit 8" SCH 40PVC	50,054	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 1,431,556	\$ 283,808	\$ 121,632	\$ 1,836,996
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	50,054	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 176,191	\$ 157,671	\$ 67,573	\$ 401,436
2.12	Warning Tape	33,370	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 5,005	\$ 8,342	\$ 3,337	\$ 16,685
2.13	Trench Box Shoring (Vault)	10	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 180,791	\$ 271,186	\$ 451,977
2.14	Splice Vault Excavation	1,369	CY		\$ 17.5	\$ 7.5	\$ -	\$ 23,956	\$ 10,267	\$ 34,222
2.15	Splice Vault Supply & Installation	10	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 350,000	\$ 165,000	\$ 385,000	\$ 900,000
2.16	Splice Vault Backfill	411	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,749	\$ 2,464	\$ 8,213
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	2,250	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,800,000	\$ 3,600,000	\$ 3,600,000	\$ 9,000,000
2.19	Air Test Ducts	100,109	LF			\$ 0.25	\$ -	\$ -	\$ 25,027	\$ 25,027
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	5,468	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 76,554	\$ 76,554	\$ 38,277	\$ 191,384

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,519	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 33,993	\$ 35,693	\$ 15,297	\$ 84,984
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	25	EA		\$ 400	\$ 1,200	\$ -	\$ 9,958	\$ 29,875	\$ 39,834
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	25	EA		\$ 10	\$ 15	\$ -	\$ 249	\$ 373	\$ 622
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	50	EA		\$ 400	\$ 1,200	\$ -	\$ 19,873	\$ 59,618	\$ 79,491
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	13,548	CY		\$ 24.5	\$ 10.5	\$ -	\$ 331,922	\$ 142,252	\$ 474,175
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	10	EA			\$ 4,000	\$ -	\$ -	\$ 40,000	\$ 40,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	10,832	CF		\$ 1.0	\$ 0.5	\$ -	\$ 10,832	\$ 5,416	\$ 16,248
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 6,366,774	\$ 7,679,273	\$ 6,193,125	\$ 20,239,172
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320 DCKv 5000 kcmil copper XLPE	35,038	FT	\$ 166	\$ 100	\$ 66	\$ 5,816,321	\$ 3,489,793	\$ 2,326,529	\$ 11,632,643
3.2	Circuit #1- Cable Splicing- 320 DCKv 5000 kcmil copper XLPE	20	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 386,980	\$ 196,930	\$ 56,266	\$ 640,175
3.3	Circuit #1- Cable Termination- 320 DCKv 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.4	Circuit #2- Procurement & Installation- 320 DCKv 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 320 DCKv 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 320 DCKv 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 320 DCKv 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320 DCKv 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320 DCKv 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	10	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 209,875	\$ 125,925	\$ 83,950	\$ 419,749
3.11	Fiber Optic Cable	17,519	FT	\$ 7	\$ 3	\$ 2	\$ 129,588	\$ 58,349	\$ 38,899	\$ 226,837
3.12	Ground Continuity Conductor	17,519	FT	\$ 13	\$ 8	\$ 5	\$ 228,431	\$ 131,866	\$ 87,911	\$ 448,207
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 7,043,655	\$ 4,061,941	\$ 2,610,433	\$ 13,716,029
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 14,197,373	\$ 15,632,740	\$ 10,358,176	\$ 40,188,289
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 779,727	\$ 519,818	\$ -	\$ 779,727	\$ 519,818	\$ 1,299,546
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		401,882.89		\$ -	\$ 401,883	\$ -	\$ 401,883
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,607,531.57		\$ -	\$ 1,607,532	\$ -	\$ 1,607,532
4.4	Utility PM and Project Oversite	1	LS		401,882.89		\$ -	\$ 401,883	\$ -	\$ 401,883
4.5	Site Accommodation, Facilities, Storage	1	LS	401,882.89			\$ 401,883	\$ -	\$ -	\$ 401,883
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 2,009,414	\$ -	\$ -	\$ 2,009,414	\$ -	\$ 2,009,414
4.7	LiDAR /GPR	1.0	LS		\$ 72,339	\$ 48,226	\$ -	\$ 72,339	\$ 48,226	\$ 120,565
4.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
4.9	Surveying/Staking	1	LS		\$ 168,791	\$ 112,527	\$ -	\$ 168,791	\$ 112,527	\$ 281,318
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 401,883		\$ -	\$ 401,883	\$ -	\$ 401,883
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 120,565		\$ -	\$ 120,565	\$ -	\$ 120,565
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 364,601	\$ -	\$ -	\$ 364,601	\$ 364,601
4.16	Legal Fees (Real estate)	1.00	LS		-	10,938.03	\$ -	\$ -	\$ 10,938	\$ 10,938
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,440,000	\$ -	\$ -	\$ 1,440,000	\$ 1,440,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 14,197,373.19			\$ 1,260,727	\$ -	\$ -	\$ 1,260,727
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 40,188	\$ -	\$ -	\$ 40,188	\$ 40,188
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,662,610	\$ 6,494,937	\$ 2,543,579	\$ 10,701,125

NEXtera Energy- TO43 Enhanced 1

Comp 70. Barrett Landing-Buchanan Landing 320kV DC Offshore Submarine Cables - Single circuit

(New Barrett HVDC-New Buchana HVDC 320KV)

Total: #####

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345KV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV				
1. SUBMARINE CABLE	\$ 191,650,932	\$ 388,430,196	\$ 245,807,596	\$ 825,888,724
2. TRANSITION STATION	\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 25,138,376	\$ 115,645,340	\$ 32,306,315	\$ 173,090,031
SUBTOTAL (Costs):	\$ 216,895,309	\$ 504,248,416	\$ 278,322,948	\$ 999,466,673
CONTRACTOR MARK-UP (OH&P)	\$ 39,041,156	\$ 90,764,715	\$ 50,098,131	\$ 179,904,001
SUBTOTAL:	\$ 255,936,465	\$ 595,013,131	\$ 328,421,079	\$ 1,179,370,674
CONTINGENCY ON ENTIRE PROJECT	\$ 51,187,293	\$ 119,002,626	\$ 65,684,216	\$ 235,874,135
TOTAL:	\$ 307,123,757	\$ 714,015,757	\$ 394,105,294	\$ 1,415,244,809

Description of Work: Part of New Barrett HVDC-New Buchana HVDC 320KV, symmetrical monopole 1200MW HVDC subsea cable (73.54 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 320kV DC, 5000kCMIL, Cu, Single Core, XLPE, Submarine	854,241	FT	\$ 212	\$ 400	\$ 250	\$ 181,099,016	\$ 341,696,256	\$ 213,560,160	\$ 736,355,432
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 43,236,225	\$ 28,824,150	\$ -	\$ 43,236,225	\$ 28,824,150	\$ 72,060,375
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.5	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	427,120	FT	\$ 7			\$ 3,159,409	\$ -	\$ -	\$ 3,159,409
1.8	Ground Continuity Conductor	427,120	FT	\$ 13			\$ 5,569,222	\$ -	\$ -	\$ 5,569,222
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	2,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,600,000	\$ 3,200,000	\$ 3,200,000	\$ 8,000,000
TOTAL - Submarine cable:							\$ 191,650,932	\$ 388,430,196	\$ 245,807,596	\$ 825,888,724
2. TRANSITION STATION										
2.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
2.4	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.8	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
2.9	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
2.10	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
2.11	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
2.12	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
2.13	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
2.14	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, lighting arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
2.18	345kV, lighting arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
2.19	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
2.20	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
2.22	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
2.23	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	863	CY		\$ 17.5	\$ 7.5	\$ -	\$ 15,099	\$ 6,471	\$ 21,570
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.27	Splice Vault Backfill	259	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,624	\$ 1,553	\$ 5,177
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	785	CY		\$ 24.5	\$ 10.5	\$ -	\$ 19,236	\$ 8,244	\$ 27,481
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	863	CF		\$ 1.0	\$ 0.5	\$ -	\$ 863	\$ 431	\$ 1,294
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 191,756,932	\$ 388,603,076	\$ 246,016,633	\$ 826,376,642

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		8,263,766.42		\$ -	\$ 8,263,766	\$ -	\$ 8,263,766
3.3	Construction Project Management / Supervision	1	LS		33,055,065.67		\$ -	\$ 33,055,066	\$ -	\$ 33,055,066
3.4	Utility PM and Project Oversight	1	LS		8,263,766.42		\$ -	\$ 8,263,766	\$ -	\$ 8,263,766
3.5	Site Accommodation, Facilities, Storage	1	LS	8,263,766.42			\$ 8,263,766	\$ -	\$ -	\$ 8,263,766
	Engineering									
3.6	Design Engineering	1	LS		\$ 41,318,832		\$ -	\$ 41,318,832	\$ -	\$ 41,318,832
3.7	Surveying/Staking	1	LS		\$ 5,784,636		\$ -	\$ 5,784,636	\$ -	\$ 5,784,636
3.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 8,263,766		\$ -	\$ 8,263,766	\$ -	\$ 8,263,766
3.11	Environmental-special studies/investigation	1	LS		\$ 870,000		\$ -	\$ 870,000	\$ -	\$ 870,000
3.12	Warranties / LOC's	1	LS		\$ 2,479,130		\$ -	\$ 2,479,130	\$ -	\$ 2,479,130
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 6,131	\$ -	\$ -	\$ 6,131	\$ 6,131
3.15	Legal Fees (Real estate)	1.00	LS		-	183.93	\$ -	\$ -	\$ 184	\$ 184
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 191,756,932			\$ 16,874,610	\$ -	\$ -	\$ 16,874,610
3.21	Contractor Permits	1	LS		\$ 826,377		\$ -	\$ 826,377	\$ -	\$ 826,377
3.22	Payment & Performance Bond	1	LS			\$ 28,300,000	\$ -	\$ -	\$ 28,300,000	\$ 28,300,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 25,138,376	\$ 115,645,340	\$ 32,306,315	\$ 173,090,031

NEXtera Energy- TO43 Enhanced 1

Comp 91 - Buchanan Landing To Buchanan Onshore 320kV DC UG Cables - Single circuit

(New Barrett HVDC-New Buchana HVDC 320KV)

Total: \$ 29,939,669

NEXtera Energy- TO43 Enhanced 1										
		Material Supply	Labor Supply	Equip Supply	Total					
Comp 91 - Buchanan Landing To Buchanan Onshore 320kV DC UG Cables - Single circuit(New Barrett HVDC-New Buchana HVDC 320KV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT		\$ 361,600	\$ 1,776,560	\$ 718,240	\$ 2,856,400					
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		\$ 2,371,107	\$ 2,811,200	\$ 1,816,278	\$ 6,998,585					
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION		\$ 3,501,745	\$ 1,967,345	\$ 1,251,547	\$ 6,720,637					
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 719,376	\$ 2,973,950	\$ 874,887	\$ 4,568,212					
SUBTOTAL (Costs):		\$ 6,953,827	\$ 9,529,055	\$ 4,660,952	\$ 21,143,834					
CONTRACTOR MARK-UP (OH&P)		\$ 1,251,689	\$ 1,715,230	\$ 838,971	\$ 3,805,890					
SUBTOTAL:		\$ 8,205,516	\$ 11,244,285	\$ 5,499,923	\$ 24,949,724					
CONTINGENCY ON ENTIRE PROJECT		\$ 1,641,103	\$ 2,248,857	\$ 1,099,985	\$ 4,989,945					
TOTAL:		\$ 9,846,620	\$ 13,493,142	\$ 6,599,908	\$ 29,939,669					

Description of Work: Part of New Barrett HVDC-New Buchana HVDC 320KV, symmetrical monopole 1200MW HVDC UG cable (1.5 miles- Buchanan landing-Buchanan Station segment)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 91 - Buchanan Landing To Buchanan Onshore 320kV DC UG Cables - Single circuit(New Barrett HVDC-New Buchana HVDC 320KV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.50	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,050,000	\$ 450,000	\$ 1,500,000
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	7,920	LF	\$ 30	\$ 18	\$ 12	\$ 237,600	\$ 142,560	\$ 95,040	\$ 475,200
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	1.50	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 60,000	\$ 180,000	\$ 60,000	\$ 300,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 361,600	\$ 1,776,560	\$ 718,240	\$ 2,856,400
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	2	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 209,700	\$ 139,800	\$ 349,500
2.2	Formwork in Trench	62,400	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 124,800	\$ 93,600	\$ 31,200	\$ 249,600
2.3	Trench Excavation	3,120	CY		\$ 17.5	\$ 7.5	\$ -	\$ 54,600	\$ 23,400	\$ 78,000
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	325	SF	\$ 50	\$ 25	\$ 14	\$ 16,250	\$ 7,963	\$ 4,550	\$ 28,763
2.5	Supply & Install Thermal Backfill	2,730	CY	\$ 350	\$ 245	\$ 105	\$ 955,500	\$ 668,850	\$ 286,650	\$ 1,911,000
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,368	CY	\$ 200	\$ 125	\$ 50	\$ 273,607	\$ 171,004	\$ 68,402	\$ 513,013
2.9	Conduit 8" SCH 40PVC	23,760	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 679,536	\$ 134,719	\$ 57,737	\$ 871,992
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	23,760	LF	\$ 3.15	\$ 3.15	\$ 1.4	\$ 83,635	\$ 74,844	\$ 32,076	\$ 190,555
2.12	Warning Tape	15,840	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 2,376	\$ 3,960	\$ 1,584	\$ 7,920
2.13	Trench Box Shoring (Vault)	5	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 90,395	\$ 135,593	\$ 225,989
2.14	Splice Vault Excavation	411	CY		\$ 17.5	\$ 7.5	\$ -	\$ 7,187	\$ 3,080	\$ 10,267
2.15	Splice Vault Supply & Installation	5	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 175,000	\$ 82,500	\$ 192,500	\$ 450,000
2.16	Splice Vault Backfill	123	CY		\$ 14.0	\$ 6.0	\$ -	\$ 1,725	\$ 739	\$ 2,464
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	47,520	LF			\$ 0.25	\$ -	\$ -	\$ 11,880	\$ 11,880
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	2,988	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 41,829	\$ 41,829	\$ 20,914	\$ 104,572
2.21	PVMT, AGGREGATE, 10", BASE COURSE	830	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 18,574	\$ 19,503	\$ 8,358	\$ 46,435
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	14	EA		\$ 400	\$ 1,200	\$ -	\$ 5,472	\$ 16,416	\$ 21,889
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	14	EA		\$ 10	\$ 15	\$ -	\$ 137	\$ 205	\$ 342

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	27	EA		\$ 400	\$ 1,200	\$ -	\$ 10,920	\$ 32,760	\$ 43,680
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	4,430	CY		\$ 24.5	\$ 10.5	\$ -	\$ 108,528	\$ 46,512	\$ 155,040
2.27	Rock Excavation and Removal	2,354	CY		\$ 243	\$ 162	\$ -	\$ 571,968	\$ 381,312	\$ 953,280
2.28	Dewatering	5	EA			\$ 4,000	\$ -	\$ -	\$ 20,000	\$ 20,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	3,531	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,531	\$ 1,765	\$ 5,296
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 2,371,107	\$ 2,811,200	\$ 1,816,278	\$ 6,998,585
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320 DCKV 5000 kcmil copper XLPE	16,632	FT	\$ 166	\$ 100	\$ 66	\$ 2,760,912	\$ 1,656,547	\$ 1,104,365	\$ 5,521,824
3.2	Circuit #1- Cable Splicing- 320 DCKV 5000 kcmil copper XLPE	10	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 193,490	\$ 98,465	\$ 28,133	\$ 320,088
3.3	Circuit #1- Cable Termination- 320 DCKV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.4	Circuit #2- Procurement & Installation- 320 DCKV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 320 DCKV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 320 DCKV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 320 DCKV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320 DCKV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320 DCKV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	5	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 104,937	\$ 62,962	\$ 41,975	\$ 209,875
3.11	Fiber Optic Cable	8,316	FT	\$ 7	\$ 3	\$ 2	\$ 61,513	\$ 27,697	\$ 18,465	\$ 107,676
3.12	Ground Continuity Conductor	8,316	FT	\$ 13	\$ 8	\$ 5	\$ 108,432	\$ 62,595	\$ 41,730	\$ 212,757
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 3,501,745	\$ 1,967,345	\$ 1,251,547	\$ 6,720,637
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,234,452	\$ 6,555,105	\$ 3,786,065	\$ 16,575,622
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 310,235	\$ 206,823	\$ -	\$ 310,235	\$ 206,823	\$ 517,059
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		165,756.22		\$ -	\$ 165,756	\$ -	\$ 165,756
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		663,024.88		\$ -	\$ 663,025	\$ -	\$ 663,025
4.4	Utility PM and Project Oversight	1	LS		165,756.22		\$ -	\$ 165,756	\$ -	\$ 165,756
4.5	Site Accommodation, Facilities, Storage	1	LS	165,756.22			\$ 165,756	\$ -	\$ -	\$ 165,756
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 828,781	\$ -	\$ -	\$ 828,781	\$ -	\$ 828,781
4.7	LiDAR /GPR	1.0	LS		\$ 29,836	\$ 19,891	\$ -	\$ 29,836	\$ 19,891	\$ 49,727
4.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 69,618	\$ 46,412	\$ -	\$ 69,618	\$ 46,412	\$ 116,029
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 165,756		\$ -	\$ 165,756	\$ -	\$ 165,756
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 49,727		\$ -	\$ 49,727	\$ -	\$ 49,727
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 1,500	\$ -	\$ -	\$ 1,500	\$ 1,500
4.16	Legal Fees (Real estate)	1.00	LS		-	45.00	\$ -	\$ -	\$ 45	\$ 45
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 580,000	\$ -	\$ -	\$ 580,000	\$ 580,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,234,451.80			\$ 553,619	\$ -	\$ -	\$ 553,619
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 16,576	\$ -	\$ -	\$ 16,576	\$ 16,576
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 719,376	\$ 2,973,950	\$ 874,887	\$ 4,568,212

NEXtera Energy- TO39 Core 4

Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit

Farragut-Sprain Brook 345KV

Total: \$ 72,630,069

NEXtera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 802,816	\$ 3,964,730	\$ 1,586,886	\$ 6,354,432
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 5,504,698	\$ 5,167,046	\$ 3,326,770	\$ 13,998,514
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 10,234,014	\$ 6,167,008	\$ 3,965,048	\$ 20,366,071
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,876,078	\$ 6,488,998	\$ 2,208,328	\$ 10,573,404
SUBTOTAL (Costs):	\$ 18,417,606	\$ 21,787,782	\$ 11,087,033	\$ 51,292,421
CONTRACTOR MARK-UP (OH&P)	\$ 3,315,169	\$ 3,921,801	\$ 1,995,666	\$ 9,232,636
SUBTOTAL:	\$ 21,732,776	\$ 25,709,583	\$ 13,082,699	\$ 60,525,057
CONTINGENCY ON ENTIRE PROJECT	\$ 4,346,555	\$ 5,141,917	\$ 2,616,540	\$ 12,105,011
TOTAL:	\$ 26,079,331	\$ 30,851,499	\$ 15,699,239	\$ 72,630,069

Description of Work: Part of Farragut-Sprain Brook 345kV segment -UG cable										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	3.24	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 2,268,000	\$ 972,000	\$ 3,240,000
1.3	Flaggers	100	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 160,000	\$ 480,000	\$ 160,000	\$ 800,000
1.4	K Rail / Lane Control / Metal Plates	17,107	LF	\$ 30	\$ 18	\$ 12	\$ 513,216	\$ 307,930	\$ 205,286	\$ 1,026,432
1.5	Police Support	4,000.0	HR		\$ 120	\$ 27	\$ -	\$ 480,000	\$ 108,000	\$ 588,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	3.24	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 129,600	\$ 388,800	\$ 129,600	\$ 648,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 802,816	\$ 3,964,730	\$ 1,586,886	\$ 6,354,432
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	3.24	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 452,952	\$ 301,968	\$ 754,920
2.2	Formwork in Trench	134,218	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 268,435	\$ 201,326	\$ 67,109	\$ 536,870
2.3	Trench Excavation	6,711	CY		\$ 17.5	\$ 7.5	\$ -	\$ 117,440	\$ 50,332	\$ 167,772
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	699	SF	\$ 50	\$ 25	\$ 14	\$ 34,953	\$ 17,127	\$ 9,787	\$ 61,866
2.5	Supply & Install Thermal Backfill	5,872	CY	\$ 350	\$ 245	\$ 105	\$ 2,055,207	\$ 1,438,645	\$ 616,562	\$ 4,110,414
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	2,734	CY	\$ 200	\$ 125	\$ 50	\$ 546,750	\$ 341,719	\$ 136,688	\$ 1,025,157
2.9	Conduit 8" SCH 40PVC	68,429	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 1,957,064	\$ 387,991	\$ 166,282	\$ 2,511,337
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	34,214	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 120,435	\$ 107,775	\$ 46,189	\$ 274,399
2.12	Warning Tape	34,214	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 5,132	\$ 8,554	\$ 3,421	\$ 17,107
2.13	Trench Box Shoring (Vault)	11	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 198,870	\$ 298,305	\$ 497,175
2.14	Splice Vault Excavation	1,097	CY		\$ 17.5	\$ 7.5	\$ -	\$ 19,199	\$ 8,228	\$ 27,427
2.15	Splice Vault Supply & Installation	11	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 385,000	\$ 181,500	\$ 423,500	\$ 990,000
2.16	Splice Vault Backfill	329	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,608	\$ 1,975	\$ 6,582
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	102,643	LF			\$ 0.25	\$ -	\$ -	\$ 25,661	\$ 25,661
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	6,516	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 91,218	\$ 91,218	\$ 45,609	\$ 228,044
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,810	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 40,505	\$ 42,530	\$ 18,227	\$ 101,262

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	27	EA		\$ 400	\$ 1,200	\$ -	\$ 10,935	\$ 32,805	\$ 43,740
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	27	EA		\$ 10	\$ 15	\$ -	\$ 273	\$ 410	\$ 683
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	59	EA		\$ 400	\$ 1,200	\$ -	\$ 23,488	\$ 70,464	\$ 93,952
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	9,722	CY		\$ 24.5	\$ 10.5	\$ -	\$ 238,201	\$ 102,086	\$ 340,287
2.27	Rock Excavation and Removal	5,205	CY		\$ 243	\$ 162	\$ -	\$ 1,264,887	\$ 843,258	\$ 2,108,146
2.28	Dewatering	11	EA			\$ 4,000	\$ -	\$ -	\$ 44,000	\$ 44,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	7,808	CF		\$ 1.0	\$ 0.5	\$ -	\$ 7,808	\$ 3,904	\$ 11,712
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 5,504,698	\$ 5,167,046	\$ 3,326,770	\$ 13,998,514
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	53,888	FT	\$ 167	\$ 100	\$ 67	\$ 8,999,243	\$ 5,399,546	\$ 3,599,697	\$ 17,998,485
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	33	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 386,826	\$ 324,934	\$ 92,838	\$ 804,598
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	11	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 314,033	\$ 188,420	\$ 125,613	\$ 628,066
3.11	Fiber Optic Cable	17,963	FT	\$ 7	\$ 3	\$ 2	\$ 132,869	\$ 59,826	\$ 39,884	\$ 232,579
3.12	Ground Continuity Conductor	17,963	FT	\$ 13	\$ 8	\$ 5	\$ 234,214	\$ 135,204	\$ 90,136	\$ 459,554
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 10,234,014	\$ 6,167,008	\$ 3,965,048	\$ 20,366,071
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 16,541,529	\$ 15,298,784	\$ 8,878,705	\$ 40,719,017
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 725,325	\$ 483,550	\$ -	\$ 725,325	\$ 483,550	\$ 1,208,874
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		407,190.17		\$ -	\$ 407,190	\$ -	\$ 407,190
4.3	Construction Project Management / Supervision	1	LS		1,628,760.69		\$ -	\$ 1,628,761	\$ -	\$ 1,628,761
4.4	Utility PM and Project Oversight	1	LS		407,190.17		\$ -	\$ 407,190	\$ -	\$ 407,190
4.5	Site Accommodation, Facilities, Storage	1	LS	407,190.17			\$ 407,190	\$ -	\$ -	\$ 407,190
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 2,035,951	\$ -	\$ -	\$ 2,035,951	\$ -	\$ 2,035,951
4.7	LiDAR /GPR	1.0	LS		\$ 73,294	\$ 48,863	\$ -	\$ 73,294	\$ 48,863	\$ 122,157
4.8	Geotech	4.00	EA		2,730	1,820	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
4.9	Surveying/Staking	1	LS		\$ 171,020	\$ 114,013	\$ -	\$ 171,020	\$ 114,013	\$ 285,033
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 407,190		\$ -	\$ 407,190	\$ -	\$ 407,190
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 122,157		\$ -	\$ 122,157	\$ -	\$ 122,157
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 71,751	\$ -	\$ -	\$ 71,751	\$ 71,751
4.16	Legal Fees (Real estate)	1.00	LS		-	2,152.53	\$ -	\$ -	\$ 2,153	\$ 2,153
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,440,000	\$ -	\$ -	\$ 1,440,000	\$ 1,440,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 16,541,528.51			\$ 1,468,888	\$ -	\$ -	\$ 1,468,888
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 40,719	\$ -	\$ -	\$ 40,719	\$ 40,719
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,876,078	\$ 6,488,998	\$ 2,208,328	\$ 10,573,404

NEXTera Energy- TO39 Core 4

Comp 87. Farragut to Sprain Brook Landing 345kV Offshore Submarine Cables - Single circuit

Farragut-Sprain Brook 345KV

Total: \$ 588,938,916

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV				
1. SUBMARINE CABLE	\$ 139,758,995	\$ 117,082,632	\$ 74,945,444	\$ 331,787,071
2. TRANSITION STATION	\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 15,667,460	\$ 50,496,889	\$ 16,549,995	\$ 82,714,345
SUBTOTAL (Costs):	\$ 155,842,806	\$ 168,143,761	\$ 91,930,747	\$ 415,917,314
CONTRACTOR MARK-UP (OH&P)	\$ 28,051,705	\$ 30,265,877	\$ 16,547,534	\$ 74,865,116
SUBTOTAL:	\$ 183,894,511	\$ 198,409,638	\$ 108,478,282	\$ 490,782,430
CONTINGENCY ON ENTIRE PROJECT	\$ 36,778,902	\$ 39,681,928	\$ 21,695,656	\$ 98,156,486
TOTAL:	\$ 220,673,413	\$ 238,091,565	\$ 130,173,938	\$ 588,938,916

Description of Work: Part of Farragut-Sprain Brook 345kV segment (Include HDD's to get onshore at both ends of route)-submarine cable

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	252,067	FT	\$ 537	\$ 400	\$ 250	\$ 135,360,086	\$ 100,826,880	\$ 63,016,800	\$ 299,203,766
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 12,758,038	\$ 8,505,358	\$ -	\$ 12,758,038	\$ 8,505,358	\$ 21,263,396
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.5	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	126,034	FT	\$ 7			\$ 932,271	\$ -	\$ -	\$ 932,271
1.8	Ground Continuity Conductor	126,034	FT	\$ 13			\$ 1,643,352	\$ -	\$ -	\$ 1,643,352
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	2,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,600,000	\$ 3,200,000	\$ 3,200,000	\$ 8,000,000
TOTAL - Submarine cable:							\$ 139,758,995	\$ 117,082,632	\$ 74,945,444	\$ 331,787,071
2. TRANSITION STATION										
2.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 5,400	\$ 3,600	\$ 9,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	807	CY		24.50	10.50	\$ -	\$ 19,763	\$ 8,470	\$ 28,233
2.4	Site Grading- Excavation for Substation Pad	2,420	CY		9.00	6.00	\$ -	\$ 21,780	\$ 14,520	\$ 36,300
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,307	CY		21.00	9.00	\$ -	\$ 27,442.80	\$ 11,761.20	\$ 39,204.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,960	CY		2.40	1.60	\$ -	\$ 4,704	\$ 3,136	\$ 7,841
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	1,307	CY	25.00	2.40	1.60	\$ 32,670	\$ 3,136	\$ 2,091	\$ 37,897
2.8	Install substation 8" pad base	2,420	SY	11.00	6.00	4.00	\$ 26,620	\$ 14,520	\$ 9,680	\$ 50,820
2.9	Site Surfacing - Aggregate 6" Thick	2,420	SY	16.50	4.50	3.00	\$ 39,930	\$ 10,890	\$ 7,260	\$ 58,080
2.10	7' Station Fence w/ Barbed Wire & Grounding	450	LF	13.85	13.85	6.92	\$ 6,232	\$ 6,232	\$ 3,116	\$ 15,579
2.11	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
2.12	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
2.13	Erosion Control-Silt fence install & remove	750	LF	2.41	3.16	0.72	\$ 1,808	\$ 2,370	\$ 540	\$ 4,718
2.14	Temporary fencing	500	LF	7.50	5.25	2.25	\$ 3,750	\$ 2,625	\$ 1,125	\$ 7,500
2.15	345kV, Cable sealing end - 3 Ph	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.16	345kV, lighting arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.17	345kV, Cable sealing end - 3 Ph	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
2.18	345kV, lighting arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
2.19	AL. Bus Tubing, 5" SCH 80	630	LF	25.00	184.94	123.29	\$ 15,750	\$ 116,511	\$ 77,674	\$ 209,935
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	-	-	\$ 836	\$ -	\$ -	\$ 836
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000
2.23	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,430	\$ 1,215	\$ 135	\$ 3,780
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	1,294	CY		\$ 17.5	\$ 7.5	\$ -	\$ 22,649	\$ 9,707	\$ 32,356
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.27	Splice Vault Backfill	388	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,436	\$ 2,330	\$ 7,765
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	1,178	CY		\$ 24.5	\$ 10.5	\$ -	\$ 28,855	\$ 12,366	\$ 41,221
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	1,294	CF		\$ 1.0	\$ 0.5	\$ -	\$ 1,294	\$ 647	\$ 1,941
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 140,175,346	\$ 117,646,872	\$ 75,380,752	\$ 333,202,969
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,332,029.69		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		13,328,118.77		\$ -	\$ 13,328,119	\$ -	\$ 13,328,119
3.4	Utility PM and Project Oversight	1	LS		3,332,029.69		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.5	Site Accommodation, Facilities, Storage	1	LS	3,332,029.69			\$ 3,332,030	\$ -	\$ -	\$ 3,332,030
	Engineering									
3.6	Design Engineering	1	LS		\$ 16,660,148		\$ -	\$ 16,660,148	\$ -	\$ 16,660,148
3.7	Surveying/Staking	1	LS		\$ 2,332,421		\$ -	\$ 2,332,421	\$ -	\$ 2,332,421
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,332,030		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.11	Environmental-special studies/investigation	-	LS				\$ -	\$ -	\$ -	\$ -
3.12	Warranties / LOC's	1	LS		\$ 999,609		\$ -	\$ 999,609	\$ -	\$ 999,609
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 749,316	\$ -	\$ -	\$ 749,316	\$ 749,316
3.15	Legal Fees (Real estate)	1.00	LS		-	22,479.48	\$ -	\$ -	\$ 22,479	\$ 22,479
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 140,175,346			\$ 12,335,430	\$ -	\$ -	\$ 12,335,430
3.21	Contractor Permits	1	LS		\$ 333,203		\$ -	\$ 333,203	\$ -	\$ 333,203
3.22	Payment & Performance Bond	1	LS			\$ 11,760,000	\$ -	\$ -	\$ 11,760,000	\$ 11,760,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 15,667,460	\$ 50,496,889	\$ 16,549,995	\$ 82,714,345

NEXtera Energy- TO43 Enhanced 1

Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit

(Holbrook -Pilgrim 138kv)

Total: \$ 238,775,725

NEXtera Energy- TO43 Enhanced 1				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit(Holbrook -Pilgrim 138kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,897,280	\$ 14,241,968	\$ 5,708,112	\$ 22,847,360
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 20,396,697	\$ 16,629,197	\$ 10,827,799	\$ 47,853,693
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 31,216,810	\$ 19,377,857	\$ 12,479,700	\$ 63,074,366
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,178,312	\$ 21,187,728	\$ 7,485,465	\$ 34,851,505
SUBTOTAL (Costs):	\$ 60,689,100	\$ 71,436,750	\$ 36,501,075	\$ 168,626,925
CONTRACTOR MARK-UP (OH&P)	\$ 10,924,038	\$ 12,858,615	\$ 6,570,193	\$ 30,352,846
SUBTOTAL:	\$ 71,613,137	\$ 84,295,365	\$ 43,071,268	\$ 198,979,771
CONTINGENCY ON ENTIRE PROJECT	\$ 14,322,627	\$ 16,859,073	\$ 8,614,254	\$ 39,795,954
TOTAL:	\$ 85,935,765	\$ 101,154,438	\$ 51,685,522	\$ 238,775,725

Description of Work: Holbrook to Pilgrim. 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit(Holbrook -Pilgrim 138kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.70	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,190,000	\$ 3,510,000	\$ 11,700,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	61,776	LF	\$ 30	\$ 18	\$ 12	\$ 1,853,280	\$ 1,111,968	\$ 741,312	\$ 3,706,560
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.70	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 468,000	\$ 1,404,000	\$ 468,000	\$ 2,340,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,897,280	\$ 14,241,968	\$ 5,708,112	\$ 22,847,360
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.70	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,635,660	\$ 1,090,440	\$ 2,726,100
2.2	Formwork in Trench	479,784	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 959,568	\$ 719,676	\$ 239,892	\$ 1,919,136
2.3	Trench Excavation	39,982	CY		\$ 17.5	\$ 7.5	\$ -	\$ 699,685	\$ 299,865	\$ 999,550
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,499	SF	\$ 50	\$ 25	\$ 14	\$ 124,944	\$ 61,222	\$ 34,984	\$ 221,150
2.5	Supply & Install Thermal Backfill	20,991	CY	\$ 350	\$ 245	\$ 105	\$ 7,346,693	\$ 5,142,685	\$ 2,204,008	\$ 14,693,385
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,772	CY	\$ 200	\$ 125	\$ 50	\$ 1,954,453	\$ 1,221,533	\$ 488,613	\$ 3,664,600
2.9	Conduit 8" SCH 40PVC	247,104	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 7,067,174	\$ 1,401,080	\$ 600,463	\$ 9,068,717
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	123,552	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 434,903	\$ 389,189	\$ 166,795	\$ 990,887
2.12	Warning Tape	123,552	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,533	\$ 30,888	\$ 12,355	\$ 61,776
2.13	Trench Box Shoring (Vault)	37	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 668,927	\$ 1,003,390	\$ 1,672,316
2.14	Splice Vault Excavation	5,065	CY		\$ 17.5	\$ 7.5	\$ -	\$ 88,636	\$ 37,987	\$ 126,622
2.15	Splice Vault Supply & Installation	37	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,295,000	\$ 610,500	\$ 1,424,500	\$ 3,330,000
2.16	Splice Vault Backfill	1,519	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,273	\$ 9,117	\$ 30,389
2.17	Jack and Bore along Route	915	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 732,000	\$ 1,464,000	\$ 1,464,000	\$ 3,660,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	370,656	LF			\$ 0.25	\$ -	\$ -	\$ 92,664	\$ 92,664

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	22,923	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 320,924	\$ 320,924	\$ 160,462	\$ 802,310
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,368	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 142,506	\$ 149,631	\$ 64,127	\$ 356,264
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	98	EA		\$ 400	\$ 1,200	\$ -	\$ 39,089	\$ 117,267	\$ 156,356
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	98	EA		\$ 10	\$ 15	\$ -	\$ 977	\$ 1,466	\$ 2,443
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	210	EA		\$ 400	\$ 1,200	\$ -	\$ 83,962	\$ 251,887	\$ 335,849
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	56,586	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,386,348	\$ 594,149	\$ 1,980,498
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	37	EA			\$ 4,000	\$ -	\$ -	\$ 148,000	\$ 148,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	45,047	CF		\$ 1.0	\$ 0.5	\$ -	\$ 45,047	\$ 22,523	\$ 67,570
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 20,396,697	\$ 16,629,197	\$ 10,827,799	\$ 47,853,693
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	194,594	FT	\$ 145	\$ 87	\$ 58	\$ 28,216,188	\$ 16,929,713	\$ 11,286,475	\$ 56,432,376
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	111	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 654,678	\$ 1,092,959	\$ 312,274	\$ 2,059,911
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	37	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 986,383	\$ 591,830	\$ 394,553	\$ 1,972,766
3.11	Fiber Optic Cable	64,865	FT	\$ 7	\$ 3	\$ 2	\$ 479,805	\$ 216,039	\$ 144,026	\$ 839,869
3.12	Ground Continuity Conductor	64,865	FT	\$ 13	\$ 8	\$ 5	\$ 845,772	\$ 488,237	\$ 325,492	\$ 1,659,501
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 31,216,810	\$ 19,377,857	\$ 12,479,700	\$ 63,074,366
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 54,510,787	\$ 50,249,022	\$ 29,015,610	\$ 133,775,420
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,377,939	\$ 1,585,293	\$ -	\$ 2,377,939	\$ 1,585,293	\$ 3,963,232
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,337,754.20		\$ -	\$ 1,337,754	\$ -	\$ 1,337,754
4.3	Construction Project Management / Supervision	1	LS		5,351,016.79		\$ -	\$ 5,351,017	\$ -	\$ 5,351,017
4.4	Utility PM and Project Oversite	1	LS		1,337,754.20		\$ -	\$ 1,337,754	\$ -	\$ 1,337,754
4.5	Site Accommodation, Facilities, Storage	1	LS	1,337,754.20			\$ 1,337,754	\$ -	\$ -	\$ 1,337,754
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,688,771	\$ -	\$ -	\$ 6,688,771	\$ -	\$ 6,688,771
4.7	LiDAR /GPR	1.0	LS		\$ 240,796	\$ 160,531	\$ -	\$ 240,796	\$ 160,531	\$ 401,326
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 561,857	\$ 374,571	\$ -	\$ 561,857	\$ 374,571	\$ 936,428
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,337,754		\$ -	\$ 1,337,754	\$ -	\$ 1,337,754
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 401,326		\$ -	\$ 401,326	\$ -	\$ 401,326
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 436,364	\$ -	\$ -	\$ 436,364	\$ 436,364
4.16	Legal Fees (Real estate)	1.00	LS		-	13,090.92	\$ -	\$ -	\$ 13,091	\$ 13,091
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,760,000	\$ -	\$ -	\$ 4,760,000	\$ 4,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 54,510,787.43			\$ 4,840,558	\$ -	\$ -	\$ 4,840,558
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 133,775	\$ -	\$ -	\$ 133,775	\$ 133,775
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,178,312	\$ 21,187,728	\$ 7,485,465	\$ 34,851,505

NEXTera Energy- TO43 Enhanced 1	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO43 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 _Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided by the developer.
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 3 circuits, 2 cable per circuit, so there are 6 passes.
42	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications -	
43	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
44	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
45	Substation pad is based on 8" base and 6" surfacing rock.
46	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
47	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
48	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
49	Assume concrete cantilever retaining wall for Sprain Brook expansion, the assumed dimension details please see the tab
50	Assume 70% rock for Sprain brook 345kV expansion excavation
51	Assume 90% rock for new Sprain brook HVDC yard excavation

NEXtera Energy- TO44 Enhanced 2		
REVISION: 1		
NEXtera Energy- TO44 Enhanced 2 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 71,756,341
Direct Labor, Material & Equipment Costs	2.Station 31 East Garden City 345/138 kV Substation Upgrades	\$ 171,119,189
Direct Labor, Material & Equipment Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 78,638,755
Direct Labor, Material & Equipment Costs	4.Barrett 138 kV Substation Upgrades	\$ 41,509,967
Direct Labor, Material & Equipment Costs	5.Dunwoodie 345 kV GIS Substation	\$ 38,003,264
Direct Labor, Material & Equipment Costs	6.Elwood 138 kV Substation Upgrades	\$ 4,224,612
Direct Labor, Material & Equipment Costs	7.Jamaica 138 kV Substation Upgrades	\$ 7,018,767
Direct Labor, Material & Equipment Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 53,527,289
Direct Labor, Material & Equipment Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 25,813,520
Direct Labor, Material & Equipment Costs	10.Shore Road 138kV Substation Upgrades	\$ 7,453,423
Direct Labor, Material & Equipment Costs	11.Sprain Brook 345kV Substation Expansion	\$ 327,109,351
Direct Labor, Material & Equipment Costs	12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$ 316,467,326
Direct Labor, Material & Equipment Costs	13- Station 30a New Northport HVDC 1200MW Converter Station	\$ 316,424,093
Direct Labor, Material & Equipment Costs	14 - Northport 138kV GIS Substation	\$ 25,174,983
Direct Labor, Material & Equipment Costs	15.Pilgrim 138kV Substation Upgrades	\$ 2,004,218
Direct Labor, Material & Equipment Costs	16. - Comp 231 & 101 Buchanan 345kV GIS & HVDC Substation Upgrade	\$ 735,386,604
Direct Labor, Material & Equipment Costs	17. Farragut 345kV Substation Expansion	\$ 73,376,547
Direct Labor, Material & Equipment Costs	18- Corona 138kV Substation Upgrades	\$ 11,811,757
Direct Labor, Material & Equipment Costs	19.Holbrook 138kV Substation Upgrades	\$ 2,315,867
Direct Labor, Material & Equipment Costs	20- Ramapo 345kV Substation Upgrades	\$ 6,739,802
Direct Labor, Material & Equipment Costs	21. Existing Ruland Road 138 kV Substation	\$ 1,077,395
Direct Labor, Material & Equipment Costs	22. Existing East Garden City 138 kV Substation Upgrades	\$ 15,046,417
SUBTOTAL (Costs):		\$ 2,331,999,487
CONTRACTOR MARK-UP (OH&P)		\$ 248,060,308
SUBTOTAL (AFTER MU):		\$ 2,580,059,795
CONTINGENCY ON ENTIRE PROJECT		\$ 516,011,959
Substation TOTAL:		\$ 3,096,071,754

Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$ 106,106,649
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 195,310,866
Direct Labor, Material & Equipment Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$ 89,348,530
Direct Labor, Material & Equipment Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV	\$ 424,887,357
Direct Labor, Material & Equipment Costs	Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-Sprain Brook 320KV DC	\$ 302,256,116
Direct Labor, Material & Equipment Costs	Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)	\$ 217,033,473
Direct Labor, Material & Equipment Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kV)	\$ 196,661,987
Direct Labor, Material & Equipment Costs	Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 222,396,395
Direct Labor, Material & Equipment Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 75,390,181
Direct Labor, Material & Equipment Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit (Pilgram to Northport kV)	\$ 93,067,293
Direct Labor, Material & Equipment Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 14,061,400
Direct Labor, Material & Equipment Costs	Comp 249 (MODIFY) - Jamaica To Farragut (Farragut-Metropolitan Ave) 345kV Onshore UG Cables -Single circuit (EGC-Farragut 345kv)	\$ 98,251,583
Direct Labor, Material & Equipment Costs	Comp 207 (Modify)- Corona to Jamaica (Corona-Metropolitan Ave) 138kV Onshore UG Cables -Single circuit (Corona to Jamaica 138kV)	\$ 29,117,119
Direct Labor, Material & Equipment Costs	Comp 207&249 - Metropolitan Ave-JA 138 and 345kV Onshore UG Cables -Double circuits (Corona-Jamaica 138kv & EGC-Farragut 345kv)	\$ 59,715,682
Direct Labor, Material & Equipment Costs	Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double circuits (Corona-Jamaica 138kV& EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$ 236,771,169
Direct Labor, Material & Equipment Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 2,624,365
Direct Labor, Material & Equipment Costs	Other Comp. 138kV Upgrades	\$ 7,755,000
Direct Labor, Material & Equipment Costs	Comp 225&248 - Buchanan to Ramapo 345kV OH/UG Cables - Single circuit (New Buchanan - Ramapo 345 kV)	\$ 154,423,598
Direct Labor, Material & Equipment Costs	Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)	\$ 4,844,809,741
Direct Labor, Material & Equipment Costs	Comp 254 - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)	\$ 25,955,403
Direct Labor, Material & Equipment Costs	Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit Farragut-Sprain Brook 345KV	\$ 40,719,017
Direct Labor, Material & Equipment Costs	Comp 87. Farragut to Sprain Brook Landing 345kV Offshore Submarine Cables - Single circuit Farragut-Sprain Brook 345KV	\$ 333,202,969
Direct Labor, Material & Equipment Costs	Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit (Holbrook -Pilgrim 138kv)	\$ 133,775,420
SUBTOTAL (Costs):		\$ 7,917,702,714
CONTRACTOR MARK-UP (OH&P)		\$ 1,425,186,489
SUBTOTAL (AFTER MU):		\$ 9,342,889,203
CONTINGENCY ON ENTIRE PROJECT		\$ 1,868,577,841
Transmission Line TOTAL:		\$ 11,211,467,043
NEXTera Energy- TO44 Enhanced 2Total Direct Cost		\$ 14,307,538,796.95

NEXTera Energy- TO44 Enhanced 2 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1. Station 29 New Ruland Road 345/138 kV Substation	\$ 21,452,240
Indirect Costs	2.Station 31 East Garden City 345/138 kV Substation Upgrades	\$ 80,189,183
Indirect Costs	3.Station 48 Valley Stream 345/138 kV Substation Upgrades	\$ 24,786,200
Indirect Costs	4.Barrett 138 kV Substation Upgrades	\$ 14,212,557
Indirect Costs	5.Dunwoodie 345 kV GIS Substation	\$ 9,740,565
Indirect Costs	6.Elwood 138 kV Substation Upgrades	\$ 1,387,563
Indirect Costs	7.Jamaica 138 kV Substation Upgrades	\$ 1,412,308
Indirect Costs	8.Newbridge 345/138 kV GIS Substation Upgrades	\$ 11,999,373
Indirect Costs	9.Rainey 345kV GIS Substation Upgrades	\$ 7,677,720
Indirect Costs	10.Shore Road 138kV Substation Upgrades	\$ 2,393,936
Indirect Costs	11.Sprain Brook 345kV Substation Expansion	\$ 100,658,159
Indirect Costs	12 - Station 36a Sprain Brook HVDC 1200MW Converter Station	\$ 35,329,140
Indirect Costs	13- Station 30a New Northport HVDC 1200MW Converter Station	\$ 30,991,771
Indirect Costs	14 - Northport 138kV GIS Substation	\$ 4,620,516
Indirect Costs	15.Pilgrim 138kV Substation Upgrades	\$ 630,946
Indirect Costs	16. - Comp 231 & 101 Buchanan 345kV GIS & HVDC Substation Upgrade	\$ 68,128,670
Indirect Costs	17. Farragut 345kV Substation Expansion	\$ 20,640,926
Indirect Costs	18- Corona 138kV Substation Upgrades	\$ 3,835,693
Indirect Costs	19.Holbrook 138kV Substation Upgrades	\$ 721,068
Indirect Costs	20- Ramapo 345kV Substation Upgrades	\$ 2,140,145
Indirect Costs	21. Existing Ruland Road 138 kV Substation	\$ 356,246
Indirect Costs	22. Existing East Garden City 138 kV Substation Upgrades	\$ 4,938,374
SUBTOTAL (Costs):		\$ 448,243,300
CONTRACTOR MARK-UP (OH&P)		\$ 80,683,794
SUBTOTAL (AFTER MU):		\$ 528,927,094
CONTINGENCY ON ENTIRE PROJECT		\$ 105,785,419
Substation TOTAL:		\$ 634,712,513

Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit (EGC To Dunwoodie 345 kV)	\$ 27,103,560
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits (EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)	\$ 49,373,632
Indirect Costs	Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit (Northport To Sprain Brook 320 kV DC)	\$ 23,027,188
Indirect Costs	Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV	\$ 101,825,530
Indirect Costs	Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit Northport-Sprain Brook 320KV DC	\$ 71,261,605
Indirect Costs	Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits (EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)	\$ 55,307,165
Indirect Costs	Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit (Ruland To Sprain Brook 345 kV)	\$ 50,420,274
Indirect Costs	Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits	\$ 56,015,535
Indirect Costs	Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits	\$ 18,760,576
Indirect Costs	Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit (Pilgram to Northport kV)	\$ 23,919,365
Indirect Costs	Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit	\$ 3,945,883
Indirect Costs	Comp 249 (MODIFY) - Jamaica To Farragut (Farragut-Metropolitan Ave) 345kV Onshore UG Cables -Single circuit (EGC-Farragut 345kv)	\$ 25,399,804
Indirect Costs	Comp 207 (Modify)- Corona to Jamaica (Corona-Metropolitan Ave) 138kV Onshore UG Cables -Single circuit (Corona to Jamaica 138kV)	\$ 7,658,408
Indirect Costs	Comp 207&249 - Metropolitan Ave-JA 138 and 345kV Onshore UG Cables -Double circuits (Corona-Jamaica 138kv & EGC-Farragut 345kv)	\$ 15,281,048
Indirect Costs	Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double circuits (Corona-Jamaica 138kV& EGC-Jamaica 138kv & EGC-Farragut 345kv)	\$ 60,047,685
Indirect Costs	Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit	\$ 1,157,351
Indirect Costs	Other Comp. 138kV Upgrades	\$ 3,514,917
Indirect Costs	Comp 225&248 - Buchanan to Ramapo 345kV OH/UG Cables - Single circuit (New Buchanan - Ramapo 345 kV)	\$ 39,731,171
Indirect Costs	Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)	\$ 1,009,338,319
Indirect Costs	Comp 254 - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)	\$ 6,928,909
Indirect Costs	Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit Farragut-Sprain Brook 345KV	\$ 10,573,404
Indirect Costs	Comp 87. Farragut to Sprain Brook Landing 345kV Offshore Submarine Cables - Single circuit Farragut-Sprain Brook 345KV	\$ 82,714,345
Indirect Costs	Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit (Holbrook -Pilgrim 138kv)	\$ 34,851,505
SUBTOTAL (Costs):		\$ 1,782,103,059
CONTRACTOR MARK-UP (OH&P)		\$ 320,778,551
SUBTOTAL (AFTER MU):		\$ 2,102,881,610
CONTINGENCY ON ENTIRE PROJECT		\$ 420,576,322
Transmission Line TOTAL:		\$ 2,523,457,932
NEXTera Energy- TO44 Enhanced 2 Total Indirect Cost		\$ 3,158,170,445

NEXTera Energy- TO44 Enhanced 2 Total	\$ 17,465,709,242
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NEXtera Energy- TO44 Enhanced 2

1. Station 29 New Ruland Road 345/138 kV Substation

Total: \$ 130,328,792

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
1. Station 29 New Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,525,983	\$ 1,300,112	\$ 762,874	\$ 3,588,968
2. SUBSTATION FOUNDATIONS	\$ 2,268,952	\$ 2,565,809	\$ 1,604,887	\$ 6,439,648
3. SUBSTATION STRUCTURES	\$ 1,003,878	\$ 883,987	\$ 531,389	\$ 2,419,254
4. MAJOR EQUIPTMENT	\$ 33,974,138	\$ 6,680,324	\$ 4,252,876	\$ 44,907,338
5. LOW VOLTAGE & CONTROL CABLE	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH	\$ 3,830,653	\$ 2,117,722	\$ 1,141,383	\$ 7,089,758
7. GROUND GRID	\$ 197,725	\$ 142,339	\$ 33,060	\$ 373,123
8. CONTROL ENCLOSURE	\$ 3,191,085	\$ 2,611,419	\$ 973,666	\$ 6,776,170
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,660,765	\$ 12,690,935	\$ 4,100,541	\$ 21,452,240
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 45,030,551	\$ 25,578,737	\$ 11,109,293	\$ 81,718,582
SUBTOTAL (Costs):	\$ 50,775,551	\$ 29,025,737	\$ 13,407,293	\$ 93,208,582
CONTRACTOR MARK-UP (OH&P)	\$ 8,450,199	\$ 4,810,993	\$ 2,137,553	\$ 15,398,745
SUBTOTAL:	\$ 59,225,750	\$ 33,836,730	\$ 15,544,846	\$ 108,607,326
CONTINGENCY ON ENTIRE PROJECT	\$ 11,845,150	\$ 6,767,346	\$ 3,108,969	\$ 21,721,465
TOTAL:	\$ 71,070,900	\$ 40,604,076	\$ 18,653,815	\$ 130,328,792

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1. Station 29 New Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 48,600	\$ 32,400	\$ 81,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,895	SY	4.85	7.20	4.80	\$ 18,890	\$ 28,042	\$ 18,695	\$ 65,627
1.4	Strip and Dispose Top Soil	7,260	CY		24.50	10.50	\$ -	\$ 177,870	\$ 76,230	\$ 254,100
1.5	Site Grading- Excavation for Substation Pad	21,780	CY		9.00	6.00	\$ -	\$ 196,020	\$ 130,680	\$ 326,700
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	11,761	CY		21.00	9.00	\$ -	\$ 246,985.20	\$ 105,850.80	\$ 352,836.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	17,642	CY		2.40	1.60	\$ -	\$ 42,340	\$ 28,227	\$ 70,567
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	11,761	CY	25.00	2.40	1.60	\$ 294,030	\$ 28,227	\$ 18,818	\$ 341,075
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,710	LF	13.85	13.85	6.92	\$ 23,680	\$ 23,680	\$ 11,840	\$ 59,200
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	15,000	SF	1.50	1.50	1.00	\$ 22,500	\$ 22,500	\$ 15,000	\$ 60,000
1.17	Erosion Control-Silt fence install & remove	2,700	LF	2.41	3.16	0.72	\$ 6,507	\$ 8,532	\$ 1,944	\$ 16,983
1.18	Temporary fencing	1,800	LF	7.50	5.25	2.25	\$ 13,500	\$ 9,450	\$ 4,050	\$ 27,000
1.19	Substation entrance with asphalt	4,500	SY	19.50	26.00	19.50	\$ 87,750	\$ 117,000	\$ 87,750	\$ 292,500
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,525,983	\$ 1,300,112	\$ 762,874	\$ 3,588,968
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	127	CY	703.89	804.44	502.78	\$ 89,196	\$ 101,939	\$ 63,712	\$ 254,847
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	230	CY	703.89	804.44	502.78	\$ 161,668	\$ 184,764	\$ 115,477	\$ 461,909
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
=3*3	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
11	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138kV, Power Transformer with oil containment	656	CY	703.89	804.44	502.78	\$ 461,749	\$ 527,713	\$ 329,820	\$ 1,319,282
2.14	345kV, Shunt Reactor with oil containment-275MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	259	CY	703.89	804.44	502.78	\$ 182,306	\$ 208,350	\$ 130,219	\$ 520,875
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.31	Precast Firewall for transformer, PARs, reactors	2,010	SF	25.00	15.00	10.00	\$ 50,250	\$ 30,150	\$ 20,100	\$ 100,500
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 2,268,952	\$ 2,565,809	\$ 1,604,887	\$ 6,439,648
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	29	EA	4,810.00	2,886.00	1,924.00	\$ 139,490	\$ 83,694	\$ 55,796	\$ 278,980
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	8	EA	19,240.00	11,544.00	7,696.00	\$ 153,920	\$ 92,352	\$ 61,568	\$ 307,840
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus Tubing, 5" SCH 80	1,950	LF	25.00	184.94	123.29	\$ 48,750	\$ 360,629	\$ 240,419	\$ 649,799
3.23	AL Bus fittings	1	LS	58,500.00	58,500.00	29,250.00	\$ 58,500	\$ 58,500	\$ 29,250	\$ 146,250
3.24	Steel grating and support beams-transformer moat	173,120	LB	2.73	1.17	0.50	\$ 472,932	\$ 202,377	\$ 86,733	\$ 762,043
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,003,878	\$ 883,987	\$ 531,389	\$ 2,419,254
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	8	EA	57,720.00	34,632.00	23,088.00	\$ 461,760	\$ 277,056	\$ 184,704	\$ 923,520
4.6	345/138kV, Power Transformer with oil containment	2	EA	5,020,000.00	3,520.00	880.00	\$ 10,040,000	\$ 7,040	\$ 1,760	\$ 10,048,800
4.7	Transport & Testing- Transformer	2	EA		777,400.00	514,600.00	\$ -	\$ 1,554,800	\$ 1,029,200	\$ 2,584,000
4.8	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,488.00	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		426,650.00	182,850.00	\$ -	\$ 426,650	\$ 182,850	\$ 609,500
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	12,882,000.00	3,520.00	880.00	\$ 12,882,000	\$ 3,520	\$ 880	\$ 12,886,400
4.10	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.12	345kV, Circuit Breaker (PASS)	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.19	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA	920,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.21	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.22	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 33,974,138	\$ 6,680,324	\$ 4,252,876	\$ 44,907,338
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	23,100	LF	5.30	1.43	0.29	\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 122,372	\$ 33,091	\$ 6,618	\$ 162,081
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,500	LF	11.15	10.80	5.40	\$ 50,175	\$ 48,600	\$ 24,300	\$ 123,075
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,275	LF	266.50	53.04	13.26	\$ 339,788	\$ 67,626	\$ 16,907	\$ 424,320
6.7										
6.8	138kV UG- Conduit	3,499	LF	266.73	202.15	100.00	\$ 933,291	\$ 707,311	\$ 349,917	\$ 1,990,519
6.9	138kV UG- Cable	11,022	LF	145.00	87.00	58.00	\$ 1,598,168	\$ 958,901	\$ 639,267	\$ 3,196,337
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.11	Fiber Optic Cable	3,674	LF	7.40	3.33	2.22	\$ 27,176	\$ 12,236	\$ 8,158	\$ 47,570
6.12	Ground Continuity Conductor	3,674	LF	13.04	7.53	5.02	\$ 47,905	\$ 27,654	\$ 18,436	\$ 93,994
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,830,653	\$ 2,117,722	\$ 1,141,383	\$ 7,089,758
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	20,055	LF	2.09	3.42	1.46	\$ 41,935	\$ 68,494	\$ 29,355	\$ 139,783
7.2	Caweld, DSA, 4/0 , T, CROSS	540	EA	165.00	75.00		\$ 89,100	\$ 40,500	\$ -	\$ 129,600
7.3	Ground Rod, 3/4" x 15'	494	EA	135.00	67.50	7.50	\$ 66,690	\$ 33,345	\$ 3,705	\$ 103,740
TOTAL - GROUND GRID							\$ 197,725	\$ 142,339	\$ 33,060	\$ 373,123
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	1	EA	407,211.00	285,047.70	122,163.30	\$ 407,211	\$ 285,048	\$ 122,163	\$ 814,422
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Anr	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	125VDC Battery System	4	LS	25,000.00	22,750.00	9,750.00	\$ 100,000	\$ 91,000	\$ 39,000	\$ 230,000
8.21	Control house AC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.22	Control House DC Panel	3	EA	65,000.00	91,000.00	39,000.00	\$ 195,000	\$ 273,000	\$ 117,000	\$ 585,000
8.23	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,191,085	\$ 2,611,419	\$ 973,666	\$ 6,776,170
1. Station 29 New Ruland Road 345/138 kV Substation							\$ 46,114,786	\$ 16,334,802	\$ 9,306,753	\$ 71,756,341
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		696,379.43	298,448.33	\$ -	\$ 696,379	\$ 298,448	\$ 994,828
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,410,653.65		\$ -	\$ 2,410,654	\$ -	\$ 2,410,654
9.4	Utility PM and Project Oversight	1	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.5	Site Accommodation, Facilities, Storage	1	LS	602,663.41			\$ 602,663	\$ -	\$ -	\$ 602,663
	Engineering									
9.6	Design Engineering	1.00	LS		4,821,307.30		\$ -	\$ 4,821,307	\$ -	\$ 4,821,307
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		421,864.39		\$ -	\$ 421,864	\$ -	\$ 421,864
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,259,987.80		\$ -	\$ 2,259,988	\$ -	\$ 2,259,988
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		602,663.41		\$ -	\$ 602,663	\$ -	\$ 602,663
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		180,799.02		\$ -	\$ 180,799	\$ -	\$ 180,799
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,600,000	\$ -	\$ -	\$ 2,600,000	\$ 2,600,000
9.20	Sales Tax on Materials	8.80%	LS	46,114,786.29			\$ 4,058,101	\$ -	\$ -	\$ 4,058,101
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		71,756.34		\$ -	\$ 71,756	\$ -	\$ 71,756
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,660,765	\$ 12,690,935	\$ 4,100,541	\$ 21,452,240

NEXTera Energy- TO44 Enhanced 2

2.Station 31 East Garden City 345/138 kV Substation Upgrades

Total: \$ 350,780,975

NEXTera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
2.Station 31 East Garden City 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS	\$ 6,323,828	\$ 6,833,118	\$ 4,288,849	\$ 17,445,796
3. SUBSTATION STRUCTURES	\$ 2,258,419	\$ 1,707,045	\$ 978,475	\$ 4,943,939
4. MAJOR EQUIPTMENT	\$ 86,834,800	\$ 16,960,872	\$ 11,178,648	\$ 114,974,320
5. LOW VOLTAGE & CONTROL CABLE	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
6. CONDUIT & CABLE TRENCH	\$ 8,749,796	\$ 4,973,297	\$ 2,721,841	\$ 16,444,934
7. GROUND GRID	\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE	\$ 5,916,040	\$ 4,481,372	\$ 1,683,668	\$ 12,081,080
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,206,253	\$ 29,104,053	\$ 39,878,877	\$ 80,189,183
Turnkey cost (HVDC, GIS)	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
Non-Turnkey cost	\$ 105,496,942	\$ 55,633,327	\$ 54,958,103	\$ 216,088,372
SUBTOTAL (Costs):	\$ 123,106,942	\$ 66,199,327	\$ 62,002,103	\$ 251,308,372
CONTRACTOR MARK-UP (OH&P)	\$ 20,046,050	\$ 10,647,959	\$ 10,315,099	\$ 41,009,107
SUBTOTAL:	\$ 143,152,991	\$ 76,847,286	\$ 72,317,202	\$ 292,317,479
CONTINGENCY ON ENTIRE PROJECT	\$ 28,630,598	\$ 15,369,457	\$ 14,463,440	\$ 58,463,496
TOTAL:	\$ 171,783,590	\$ 92,216,743	\$ 86,780,642	\$ 350,780,975

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at existng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.Station 31 East Garden City 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	900,000.00	600,000.00	\$ -	\$ 900,000	\$ 600,000	\$ 1,500,000
1.3	New Access Road - 20'	3,149	SY	4.85	7.20	4.80	\$ 15,272	\$ 22,672	\$ 15,115	\$ 53,059
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	27,443	CY		9.00	6.00	\$ -	\$ 246,985	\$ 164,657	\$ 411,642
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	14,819	CY		21.00	9.00	\$ -	\$ 311,201.35	\$ 133,372.01	\$ 444,573.36
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	22,229	CY		2.40	1.60	\$ -	\$ 53,349	\$ 35,566	\$ 88,915
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	14,819	CY	25.00	2.40	1.60	\$ 370,478	\$ 35,566	\$ 23,711	\$ 429,754
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	21,780	SY	11.00	6.00	4.00	\$ 239,580	\$ 130,680	\$ 87,120	\$ 457,380
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,094	LF	13.85	13.85	6.92	\$ 28,998	\$ 28,998	\$ 14,499	\$ 72,494
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,285	LF	2.41	3.16	0.72	\$ 7,917	\$ 10,381	\$ 2,365	\$ 20,663
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	556	SY	19.50	26.00	19.50	\$ 10,833	\$ 14,444	\$ 10,833	\$ 36,111
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,520,689	\$ 1,991,295	\$ 1,238,557	\$ 4,750,541
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.4	345kV, Bus support-3 Ph, low	332	CY	703.89	804.44	502.78	\$ 233,549	\$ 266,913	\$ 166,821	\$ 667,283
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	277	CY	703.89	804.44	502.78	\$ 195,117	\$ 222,991	\$ 139,369	\$ 557,477
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	107	CY	703.89	804.44	502.78	\$ 75,316	\$ 86,075	\$ 53,797	\$ 215,188
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.14	345kV, Shunt Reactor with oil containment-150MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-50MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.17	345kV, Phase Angle Regulator with oil containment	1,780	CY	703.89	804.44	502.78	\$ 1,252,915	\$ 1,431,903	\$ 894,940	\$ 3,579,758
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	1,867	CY	703.89	804.44	502.78	\$ 1,314,153	\$ 1,501,889	\$ 938,681	\$ 3,754,724
2.21	345kV, Surge arrester	161	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	1,917	CY	703.89	804.44	502.78	\$ 1,349,094	\$ 1,541,822	\$ 963,639	\$ 3,854,555
2.31	Precast Firewall for transformer, PARs, reactors	29,040	SF	25.00	15.00	10.00	\$ 726,000	\$ 435,600	\$ 290,400	\$ 1,452,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 6,323,828	\$ 6,833,118	\$ 4,288,849	\$ 17,445,796
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.4	345kV, Bus support-3 Ph, low	30	EA	8,346.00	5,758.74	3,839.16	\$ 250,380	\$ 172,762	\$ 115,175	\$ 538,317
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	21	EA	8,346.00	5,758.74	3,839.16	\$ 175,266	\$ 120,934	\$ 80,622	\$ 376,822
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	3,000	LF	25.00	184.94	123.29	\$ 75,000	\$ 554,814	\$ 369,876	\$ 999,690
3.22	AL. Bus fittings	1	LS	90,000.00	90,000.00	45,000.00	\$ 90,000	\$ 90,000	\$ 45,000	\$ 225,000
3.23	Steel grating and support beams-transformer moat	519,360	LB	2.73	1.17	0.50	\$ 1,418,797	\$ 607,132	\$ 260,199	\$ 2,286,128
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 2,258,419	\$ 1,707,045	\$ 978,475	\$ 4,943,939

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	21	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	30	EA	17,400.00	5,460.00	2,340.00	\$ 522,000	\$ 163,800	\$ 70,200	\$ 756,000
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	2	EA	3,026,425.00	3,520.00	880.00	\$ 6,052,850	\$ 7,040	\$ 1,760	\$ 6,061,650
4.9	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00				
4.10	345kV, Shunt Reactor with oil containment-50MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.11	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.12	Transport & Testing- Shunt Reactor	8	EA		424,900.00	279,600.00	\$ -	\$ 3,399,200	\$ 2,236,800	\$ 5,636,000
4.13	345kV, Phase Angle Regulator with oil containment	4	EA	12,882,000.00	3,520.00	880.00	\$ 51,528,000	\$ 14,080	\$ 3,520	\$ 51,545,600
4.14	Transport & Testing- PAR	4	EA		615,400.00	406,600.00	\$ -	\$ 2,461,600	\$ 1,626,400	\$ 4,088,000
4.15	345kV, Gas Insulated Switchgear, BAAH Arrangement	21	BKR	838,571.43	503,142.86	335,428.57	\$ 17,610,000	\$ 10,566,000	\$ 7,044,000	\$ 35,220,000
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.20	138kV, Phase Angle Regulator with oil containment	0	EA	10,366,370.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 86,834,800	\$ 16,960,872	\$ 11,178,648	\$ 114,974,320
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	27,600	LF	5.30	1.43	0.29	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,700	LF	11.15	10.80	5.40	\$ 63,555	\$ 61,560	\$ 30,780	\$ 155,895
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,063	LF	266.50	53.04	13.26	\$ 283,156	\$ 56,355	\$ 14,089	\$ 353,600
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	8,016	LF	266.73	202.15	100.00	\$ 2,138,035	\$ 1,620,346	\$ 801,609	\$ 4,559,990
6.12	345kV UG- Cable	24,047	LF	167.00	100.20	66.80	\$ 4,015,866	\$ 2,409,519	\$ 1,606,346	\$ 8,031,731
6.13	345kV UG- Termination	75	EA	27,805.00	9,846.48	2,813.28	\$ 2,085,375	\$ 738,486	\$ 210,996	\$ 3,034,857
6.14	Fiber Optic Cable	8,016	LF	7.40	3.33	2.22	\$ 59,292	\$ 26,697	\$ 17,798	\$ 103,787
6.15	Ground Continuity Conductor	8,016	LF	13.04	7.53	5.02	\$ 104,517	\$ 60,334	\$ 40,223	\$ 205,074
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,749,796	\$ 4,973,297	\$ 2,721,841	\$ 16,444,934
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,355	LF	2.09	3.42	1.46	\$ 32,107	\$ 52,442	\$ 22,475	\$ 107,024
7.2	Caweld, DSA, 4/0 , T, CROSS	414	EA	165.00	75.00		\$ 68,310	\$ 31,050	\$ -	\$ 99,360
7.3	Ground Rod, 3/4" x 15'	374	EA	135.00	67.50	7.50	\$ 50,490	\$ 25,245	\$ 2,805	\$ 78,540
TOTAL - GROUND GRID							\$ 150,907	\$ 108,737	\$ 25,280	\$ 284,924
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ 3,817,603	\$ 2,672,322	\$ 1,145,281	\$ 7,635,206
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.4	Backup Line Relays (87L): GE L90	12	EA	21,328.12	17,062.49	4,265.62	\$ 255,937	\$ 204,750	\$ 51,187	\$ 511,875
8.5	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	11	EA	21,328.12	17,062.49	4,265.62	\$ 234,609	\$ 187,687	\$ 46,922	\$ 469,219

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	11	EA	21,328.12	17,062.49	4,265.62	\$ 234,609	\$ 187,687	\$ 46,922	\$ 469,219
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.21	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.22	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.23	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.25	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 5,916,040	\$ 4,481,372	\$ 1,683,668	\$ 12,081,080
2.Station 31 East Garden City 345/138 kV Substation Upgrades							\$ 111,900,689	\$ 37,095,274	\$ 22,123,226	\$ 171,119,189
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,072,647.49	888,277.49	\$ -	\$ 2,072,647	\$ 888,277	\$ 2,960,925
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,358,991.89		\$ -	\$ 1,358,992	\$ -	\$ 1,358,992
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		5,435,967.56		\$ -	\$ 5,435,968	\$ -	\$ 5,435,968
9.4	Utility PM and Project Oversight	1	LS		1,358,991.89		\$ -	\$ 1,358,992	\$ -	\$ 1,358,992
9.5	Site Accommodation, Facilities, Storage	1	LS	1,358,991.89			\$ 1,358,992	\$ -	\$ -	\$ 1,358,992
	Engineering									
9.6	Design Engineering	1.00	LS		10,871,935.11		\$ -	\$ 10,871,935	\$ -	\$ 10,871,935
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		951,294.32		\$ -	\$ 951,294	\$ -	\$ 951,294
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		5,096,219.58		\$ -	\$ 5,096,220	\$ -	\$ 5,096,220
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,358,991.89		\$ -	\$ 1,358,992	\$ -	\$ 1,358,992
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		407,697.57		\$ -	\$ 407,698	\$ -	\$ 407,698
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	31,050,000.00	\$ -	\$ -	\$ 31,050,000	\$ 31,050,000
9.17	Legal Fees (Real estate)	1.00	LS		-	931,500.00	\$ -	\$ -	\$ 931,500	\$ 931,500
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 7,000,000	\$ -	\$ -	\$ 7,000,000	\$ 7,000,000
9.20	Sales Tax on Materials	8.80%	LS	111,900,689.28			\$ 9,847,261	\$ -	\$ -	\$ 9,847,261
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		171,119.19		\$ -	\$ 171,119	\$ -	\$ 171,119
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,206,253	\$ 29,104,053	\$ 39,878,877	\$ 80,189,183

NEXTera Energy- TO44 Enhanced 2

3.Station 48 Valley Stream 345/138 kV Substation Upgrades

Total: \$ 143,522,216

NEXTera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
3.Station 48 Valley Stream 345/138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS	\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES	\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326
4. MAJOR EQUIPTMENT	\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH	\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID	\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 41,419,488	\$ 27,991,539	\$ 13,683,929	\$ 83,094,955
SUBTOTAL (Costs):	\$ 51,584,488	\$ 34,090,539	\$ 17,749,929	\$ 103,424,955
CONTRACTOR MARK-UP (OH&P)	\$ 8,065,408	\$ 5,404,417	\$ 2,707,067	\$ 16,176,892
SUBTOTAL:	\$ 59,649,895	\$ 39,494,955	\$ 20,456,996	\$ 119,601,847
CONTINGENCY ON ENTIRE PROJECT	\$ 11,929,979	\$ 7,898,991	\$ 4,091,399	\$ 23,920,369
TOTAL:	\$ 71,579,875	\$ 47,393,947	\$ 24,548,395	\$ 143,522,216

Description of Work: New East Garden City 345 kV/138 kV GIS Substation, and modification at exisitng 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.Station 48 Valley Stream 345/138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	620,000.00	415,000.00	\$ -	\$ 620,000	\$ 415,000	\$ 1,035,000
1.3	New Access Road - 20'	889	SY	4.85	7.20	4.80	\$ 4,312	\$ 6,401	\$ 4,267	\$ 14,980
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	11,761	CY		9.00	6.00	\$ -	\$ 105,849	\$ 70,566	\$ 176,415
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,057	CY		2.40	1.60	\$ -	\$ 16,937	\$ 11,291	\$ 28,228
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,704	CY	25.00	2.40	1.60	\$ 117,600	\$ 11,290	\$ 7,526	\$ 136,416
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,712	SY	11.00	6.00	4.00	\$ 95,832	\$ 52,272	\$ 34,848	\$ 182,952
1.11	Site Surfacing - Aggregate 6" Thick	8,712	SY	16.50	4.50	3.00	\$ 143,748	\$ 39,204	\$ 26,136	\$ 209,088
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,222	LF	13.85	13.85	6.92	\$ 30,770	\$ 30,770	\$ 15,385	\$ 76,926
1.13	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
1.14	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,583	LF	2.41	3.16	0.72	\$ 6,225	\$ 8,162	\$ 1,860	\$ 16,247
1.18	Temporary fencing	2,190	LF	7.50	5.25	2.25	\$ 16,425	\$ 11,498	\$ 4,928	\$ 32,850
1.19	Substation entrance with asphalt	333	SY	19.50	26.00	19.50	\$ 6,500	\$ 8,667	\$ 6,500	\$ 21,667
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 903,828	\$ 1,042,806	\$ 681,014	\$ 2,627,648
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	178	CY	703.89	804.44	502.78	\$ 125,432	\$ 143,351	\$ 89,595	\$ 358,378
2.7	345kV, GIS support-1 Ph	146	CY	703.89	804.44	502.78	\$ 102,880	\$ 117,577	\$ 73,486	\$ 293,942
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50 MVAR	378	CY	703.89	804.44	502.78	\$ 266,069	\$ 304,078	\$ 190,049	\$ 760,196
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,481	CY	703.89	804.44	502.78	\$ 1,042,454	\$ 1,191,376	\$ 744,610	\$ 2,978,439
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker-relocation only	4.4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Disconnect Switch- RELOCATION ONLY	48	CY	703.89	804.44	503.78	\$ 34,124	\$ 38,999	\$ 24,423	\$ 97,547
2.28	138kV, Cable sealing end	61	CY	703.89	804.44	502.78	\$ 42,655	\$ 48,749	\$ 30,468	\$ 121,873
2.29	138kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	863	CY	703.89	804.44	502.78	\$ 607,650	\$ 694,457	\$ 434,036	\$ 1,736,142
2.33	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.35	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,969,736	\$ 3,393,984	\$ 2,121,289	\$ 8,485,009
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	27	EA	8,346.00	5,758.74	3,839.16	\$ 225,342	\$ 155,486	\$ 103,657	\$ 484,485
3.7	345kV, GIS support-1 Ph	36	EA	8,346.00	5,758.74	3,839.16	\$ 300,456	\$ 207,315	\$ 138,210	\$ 645,980
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.17	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	240	LF	25.00	184.94	123.29	\$ 6,000	\$ 44,385	\$ 29,590	\$ 79,975
3.21	AL. Bus fittings	1	LS	30,240.00	30,240.00	15,120.00	\$ 30,240	\$ 30,240	\$ 15,120	\$ 75,600
3.22	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,692,012	\$ 862,489	\$ 392,825	\$ 2,947,326

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	27	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	17,400.00	5,460.00	2,340.00	\$ 156,600	\$ 49,140	\$ 21,060	\$ 226,800
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	3	EA	5,220,000.00	3,520.00	880.00	\$ 15,660,000	\$ 10,560	\$ 2,640	\$ 15,673,200
4.7	Transport & Testing- Transformer	3	EA		771,400.00	510,600.00	\$ -	\$ 2,314,200	\$ 1,531,800	\$ 3,846,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-50 MVAR	3	EA	2,138,451.50	3,520.00	880.00	\$ 6,415,355	\$ 10,560	\$ 2,640	\$ 6,428,555
4.10	Transport & Testing- Shunt Reactor	3	EA		240,400.00	156,600.00	\$ -	\$ 721,200	\$ 469,800	\$ 1,191,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	6,669.00	5,460.00	2,340.00	\$ 40,014	\$ 32,760	\$ 14,040	\$ 86,814
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker-relocation only	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch-3 Ph	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Disconnect Switch- RELOCATION ONLY	2	EA		11,875.50	5,089.50	\$ -	\$ 23,751	\$ 10,179	\$ 33,930
4.24	138kV, Cable sealing end-3 Ph	15	EA	11,600.00	5,460.00	2,340.00	\$ 174,000	\$ 81,900	\$ 35,100	\$ 291,000
4.25	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,008	LF	550.00	275.00	82.50	\$ 554,400	\$ 277,200	\$ 83,160	\$ 914,760.00
4.29	345kV Gas-Insulated Bus Conductor-elbow	18	EA	2,500.00	1,250.00	375.00	\$ 45,000	\$ 22,500	\$ 6,750	\$ 74,250
4.30	Transport & Testing- GIL	1	LS		107,892.00	71,928.00	\$ -	\$ 107,892	\$ 71,928	\$ 179,820
TOTAL - MAJOR EQUIPMENT							\$ 33,770,383	\$ 9,893,022	\$ 6,376,108	\$ 50,039,513
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	18,600	LF	5.30	1.43	0.29	\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 98,534	\$ 26,645	\$ 5,329	\$ 130,507
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	-	-	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	-	-	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	-	-	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	-	-	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
6.7										
6.8	138kV UG- Conduit	1,919	LF	266.73	202.15	100.00	\$ 511,963	\$ 388,000	\$ 191,949	\$ 1,091,913
6.9	138kV UG- Cable	5,758	LF	145.00	87.00	58.00	\$ 834,939	\$ 500,963	\$ 333,976	\$ 1,669,878
6.10	138kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.11	345kV UG- Conduit	494	LF	266.73	202.15	100.00	\$ 131,632	\$ 99,759	\$ 49,352	\$ 280,743
6.12	345kV UG- Cable	1,481	LF	167.00	100.20	66.80	\$ 247,244	\$ 148,346	\$ 98,897	\$ 494,487
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	2,413	LF	7.40	3.33	2.22	\$ 17,848	\$ 8,036	\$ 5,358	\$ 31,242
6.15	Ground Continuity Conductor	2,413	LF	13.04	7.53	5.02	\$ 31,462	\$ 18,162	\$ 12,108	\$ 61,732
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,169,320	\$ 1,626,898	\$ 829,928	\$ 5,626,146
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	10,200	LF	2.09	3.42	1.46	\$ 21,328	\$ 34,836	\$ 14,930	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	280	EA	165.00	75.00		\$ 46,200	\$ 21,000	\$ -	\$ 67,200
7.3	Ground Rod, 3/4" x 15'	243	EA	135.00	67.50	7.50	\$ 32,805	\$ 16,403	\$ 1,823	\$ 51,030
TOTAL - GROUND GRID							\$ 100,333	\$ 72,239	\$ 16,752	\$ 189,324
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
3.Station 48 Valley Stream 345/138 kV Substation Upgrades							\$ 46,876,287	\$ 20,093,412	\$ 11,669,056	\$ 78,638,755
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		755,911.39	323,962.02	\$ -	\$ 755,911	\$ 323,962	\$ 1,079,873
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,332,350.20		\$ -	\$ 2,332,350	\$ -	\$ 2,332,350
9.4	Utility PM and Project Oversight	1	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.5	Site Accommodation, Facilities, Storage	1	LS	583,087.55			\$ 583,088	\$ -	\$ -	\$ 583,088
	Engineering									
9.6	Design Engineering	1.00	LS		6,291,100.41		\$ -	\$ 6,291,100	\$ -	\$ 6,291,100
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		408,161.29		\$ -	\$ 408,161	\$ -	\$ 408,161
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,186,578.32		\$ -	\$ 2,186,578	\$ -	\$ 2,186,578
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		583,087.55		\$ -	\$ 583,088	\$ -	\$ 583,088
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		174,926.27		\$ -	\$ 174,926	\$ -	\$ 174,926
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,803,700.00	\$ -	\$ -	\$ 2,803,700	\$ 2,803,700
9.17	Legal Fees (Real estate)	1.00	LS		-	84,111.00	\$ -	\$ -	\$ 84,111	\$ 84,111
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,860,000	\$ -	\$ -	\$ 2,860,000	\$ 2,860,000
9.20	Sales Tax on Materials	8.80%	LS	46,876,286.85			\$ 4,125,113	\$ -	\$ -	\$ 4,125,113
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		78,638.76		\$ -	\$ 78,639	\$ -	\$ 78,639
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,708,201	\$ 13,997,126	\$ 6,080,873	\$ 24,786,200

NEXtera Energy- TO44 Enhanced 2

4.Barrett 138 kV Substation Upgrades

Total: \$ 77,248,534

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
4.Barrett 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS	\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES	\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT	\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID	\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE	\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557
Turnkey cost (HVDC, GIS)	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
Non-Turnkey cost	\$ 22,313,583	\$ 13,117,388	\$ 8,801,554	\$ 44,232,524
SUBTOTAL (Costs):	\$ 28,058,583	\$ 16,564,388	\$ 11,099,554	\$ 55,722,524
CONTRACTOR MARK-UP (OH&P)	\$ 4,361,145	\$ 2,567,950	\$ 1,722,160	\$ 8,651,254
SUBTOTAL:	\$ 32,419,728	\$ 19,132,338	\$ 12,821,713	\$ 64,373,779
CONTINGENCY ON ENTIRE PROJECT	\$ 6,483,946	\$ 3,826,468	\$ 2,564,343	\$ 12,874,756
TOTAL:	\$ 38,903,673	\$ 22,958,805	\$ 15,386,056	\$ 77,248,534

Description of Work: Construct a new Barrett 138kV GIS substation adjacent to the existing Barrett 138kV substation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.Barrett 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 23,760	\$ 15,840	\$ 39,600
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,115	SY	4.85	7.20	4.80	\$ 10,257	\$ 15,227	\$ 10,151	\$ 35,636
1.4	Strip and Dispose Top Soil	3,549	CY		24.50	10.50	\$ -	\$ 86,959	\$ 37,268	\$ 124,227
1.5	Site Grading- Excavation for Substation Pad	10,648	CY		9.00	6.00	\$ -	\$ 95,832	\$ 63,888	\$ 159,720
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	5,750	CY		21.00	9.00	\$ -	\$ 120,748.32	\$ 51,749.28	\$ 172,497.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	8,625	CY		2.40	1.60	\$ -	\$ 20,700	\$ 13,800	\$ 34,500
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	5,750	CY	25.00	2.40	1.60	\$ 143,748	\$ 13,800	\$ 9,200	\$ 166,748
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	10,648	SY	11.00	6.00	4.00	\$ 117,128	\$ 63,888	\$ 42,592	\$ 223,608
1.11	Site Surfacing - Aggregate 6" Thick	10,648	SY	16.50	4.50	3.00	\$ 175,692	\$ 47,916	\$ 31,944	\$ 255,552
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,056	LF	13.85	13.85	6.92	\$ 14,623	\$ 14,623	\$ 7,312	\$ 36,559
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	8,896	SF	1.50	1.50	1.00	\$ 13,344	\$ 13,344	\$ 8,896	\$ 35,584
1.17	Erosion Control-Silt fence install & remove	1,620	LF	2.41	3.16	0.72	\$ 3,904	\$ 5,119	\$ 1,166	\$ 10,190
1.18	Temporary fencing	1,080	LF	7.50	5.25	2.25	\$ 8,100	\$ 5,670	\$ 2,430	\$ 16,200
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 944,373	\$ 647,031	\$ 373,996	\$ 1,965,400
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.26	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Surge arrester	32	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	630	CY	703.89	804.44	502.78	\$ 443,448	\$ 506,797	\$ 316,748	\$ 1,266,993
TOTAL - 345KV FOUNDATION							\$ 710,473	\$ 811,970	\$ 507,481	\$ 2,029,924
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	1,200	LF	25.00	184.94	123.29	\$ 30,000	\$ 221,926	\$ 147,950	\$ 399,876
3.21	AL. Bus fittings	1	LS	36,000.00	36,000.00	18,000.00	\$ 36,000	\$ 36,000	\$ 18,000	\$ 90,000
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 309,543	\$ 377,952	\$ 233,921	\$ 921,416
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	1	EA	10,713,172.00	3,520.00	880.00	\$ 10,713,172	\$ 3,520	\$ 880	\$ 10,717,572
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	478,750.00	287,250.00	191,500.00	\$ 5,745,000	\$ 3,447,000	\$ 2,298,000	\$ 11,490,000
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL	0	LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 17,187,548	\$ 4,238,507	\$ 2,776,589	\$ 24,202,643
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	700	LF	266.50	53.04	13.26	\$ 186,550	\$ 37,128	\$ 9,282	\$ 232,960
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	3,757	LF	266.73	202.15	100.00	\$ 1,002,081	\$ 759,444	\$ 375,708	\$ 2,137,234
6.9	138kV UG- Cable	11,271	LF	145.00	87.00	58.00	\$ 1,634,252	\$ 980,551	\$ 653,701	\$ 3,268,503
6.10	138kV UG- Termination	36	EA	27,805.00	9,846.48	2,813.28	\$ 1,000,980	\$ 354,473	\$ 101,278	\$ 1,456,731
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	3,757	LF	7.40	3.33	2.22	\$ 27,790	\$ 12,513	\$ 8,342	\$ 48,644
6.15	Ground Continuity Conductor	3,757	LF	13.04	7.53	5.02	\$ 48,986	\$ 28,278	\$ 18,852	\$ 96,117
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,912,346	\$ 2,183,727	\$ 1,172,833	\$ 7,268,907
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,820	LF	2.09	3.42	1.46	\$ 16,352	\$ 26,708	\$ 11,446	\$ 54,505
7.2	Caweld, DSA, 4/0 , T, CROSS	210	EA	165.00	75.00		\$ 34,650	\$ 15,750	\$ -	\$ 50,400
7.3	Ground Rod, 3/4" x 15'	182	EA	135.00	67.50	7.50	\$ 24,570	\$ 12,285	\$ 1,365	\$ 38,220
TOTAL - GROUND GRID							\$ 75,572	\$ 54,743	\$ 12,811	\$ 143,125
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,926,829.03	2,048,780.32	878,048.71	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	1	EA	1,145,280.92	801,696.65	343,584.28	\$ 1,145,281	\$ 801,697	\$ 343,584	\$ 2,290,562
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.17	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.18	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,347,937	\$ 1,894,121	\$ 702,815	\$ 4,944,874
4.Barrett 138 kV Substation Upgrades							\$ 25,513,220	\$ 10,214,926	\$ 5,781,821	\$ 41,509,967
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		358,811.17	153,776.22	\$ -	\$ 358,811	\$ 153,776	\$ 512,587
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,200,798.69		\$ -	\$ 1,200,799	\$ -	\$ 1,200,799
9.4	Utility PM and Project Oversight	1	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.5	Site Accommodation, Facilities, Storage	1	LS	300,199.67			\$ 300,200	\$ -	\$ -	\$ 300,200
	Engineering									
9.6	Design Engineering	1.00	LS		2,401,597.39		\$ -	\$ 2,401,597	\$ -	\$ 2,401,597
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		210,139.77		\$ -	\$ 210,140	\$ -	\$ 210,140
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,125,748.78		\$ -	\$ 1,125,749	\$ -	\$ 1,125,749
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		300,199.67		\$ -	\$ 300,200	\$ -	\$ 300,200
9.13	Environmental-special studies/investigation	1.00	LS		-	1,600,000.00	\$ -	\$ -	\$ 1,600,000	\$ 1,600,000
9.14	Warranties / LOC's	1.00	LS		90,059.90		\$ -	\$ 90,060	\$ -	\$ 90,060
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,956,171.00	\$ -	\$ -	\$ 1,956,171	\$ 1,956,171
9.17	Legal Fees (Real estate)	1.00	LS		-	58,685.13	\$ -	\$ -	\$ 58,685	\$ 58,685
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,540,000	\$ -	\$ -	\$ 1,540,000	\$ 1,540,000
9.20	Sales Tax on Materials	8.80%	LS	25,513,219.69			\$ 2,245,163	\$ -	\$ -	\$ 2,245,163
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		41,509.97		\$ -	\$ 41,510	\$ -	\$ 41,510
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,545,363	\$ 6,349,462	\$ 5,317,732	\$ 14,212,557

NEXtera Energy- TO44 Enhanced 2

5.Dunwoodie 345 kV GIS Substation

Total: \$ 64,677,743

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
5.Dunwoodie 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS	\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPTMENT	\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID	\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE	\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 11,599,927	\$ 9,176,864	\$ 6,637,039	\$ 27,413,830
SUBTOTAL (Costs):	\$ 21,764,927	\$ 15,275,864	\$ 10,703,039	\$ 47,743,830
CONTRACTOR MARK-UP (OH&P)	\$ 2,697,887	\$ 2,017,775	\$ 1,438,627	\$ 6,154,289
SUBTOTAL:	\$ 24,462,814	\$ 17,293,639	\$ 12,141,665	\$ 53,898,119
CONTINGENCY ON ENTIRE PROJECT	\$ 4,892,563	\$ 3,458,728	\$ 2,428,333	\$ 10,779,624
TOTAL:	\$ 29,355,377	\$ 20,752,367	\$ 14,569,999	\$ 64,677,743

Description of Work: Construct a new Dunwoodie 345kV GIS substation. Loop in the Pleasantville (2) and Sprain Brook lines and connect back to the existing Dunwoodie 345kV substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5.Dunwoodie 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 17,137	\$ 11,425	\$ 28,562
1.2	Demolition	0	LS	-	600,000.00	400,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,263	SY	4.85	7.20	4.80	\$ 6,124	\$ 9,092	\$ 6,061	\$ 21,278
1.4	Strip and Dispose Top Soil	2,560	CY		24.50	10.50	\$ -	\$ 62,720	\$ 26,880	\$ 89,600
1.5	Site Grading- Excavation for Substation Pad	7,680	CY		9.00	6.00	\$ -	\$ 69,120	\$ 46,080	\$ 115,200
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	4,147	CY		21.00	9.00	\$ -	\$ 87,091.20	\$ 37,324.80	\$ 124,416.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	6,221	CY		2.40	1.60	\$ -	\$ 14,930	\$ 9,953	\$ 24,883
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,147	CY	25.00	2.40	1.60	\$ 103,680	\$ 9,953	\$ 6,636	\$ 120,269
1.9	Blasting		EA	-			\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	7,680	SY	11.00	6.00	4.00	\$ 84,480	\$ 46,080	\$ 30,720	\$ 161,280
1.11	Site Surfacing - Aggregate 6" Thick	7,680	SY	16.50	4.50	3.00	\$ 126,720	\$ 34,560	\$ 23,040	\$ 184,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	864	LF	13.85	13.85	6.92	\$ 11,965	\$ 11,965	\$ 5,982	\$ 29,912
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	325,073.45	83,781.82	55,348.36	\$ 325,073	\$ 83,782	\$ 55,348	\$ 464,204
1.16	Seeding	7,296	SF	1.50	1.50	1.00	\$ 10,944	\$ 10,944	\$ 7,296	\$ 29,184
1.17	Erosion Control-Silt fence install & remove	2,100	LF	2.41	3.16	0.72	\$ 5,061	\$ 6,636	\$ 1,512	\$ 13,209
1.18	Temporary fencing	1,400	LF	7.50	5.25	2.25	\$ 10,500	\$ 7,350	\$ 3,150	\$ 21,000
1.19	Substation entrance with asphalt	486	SY	19.50	26.00	19.50	\$ 9,479	\$ 12,639	\$ 9,479	\$ 31,597
1.20	Concrete curb	0	LF	26.00	27.30	-	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 715,227	\$ 492,489	\$ 284,198	\$ 1,491,913
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,357	CY	703.89	804.44	502.78	\$ 955,172	\$ 1,091,625	\$ 682,266	\$ 2,729,063
2.20	345kV, Surge arrester	48	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	309	CY	703.89	804.44	502.78	\$ 217,416	\$ 248,475	\$ 155,297	\$ 621,189
2.31	Precast Firewall for transformer, PARs, reactors	4,620	SF	25.00	15.00	10.00	\$ 115,500	\$ 69,300	\$ 46,200	\$ 231,000
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,502,773	\$ 1,654,755	\$ 1,037,109	\$ 4,194,637
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	1	EA		337,900.00	221,600.00	\$ -	\$ 337,900	\$ 221,600	\$ 559,500
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
4.28	Transport & Testing- GIL	0	LS		-	-				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 13,711,425	\$ 6,531,420	\$ 4,327,480	\$ 24,570,325
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40	300	LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	715	LF	266.50	53.04	13.26	\$ 190,548	\$ 37,924	\$ 9,481	\$ 237,952
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 193,893	\$ 41,164	\$ 11,101	\$ 246,157
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,762	LF	2.09	3.42	1.46	\$ 7,866	\$ 12,848	\$ 5,506	\$ 26,221
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	90	EA	135.00	67.50	7.50	\$ 12,150	\$ 6,075	\$ 675	\$ 18,900
TOTAL - GROUND GRID							\$ 38,496	\$ 27,323	\$ 6,181	\$ 72,001
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,481,442.00	1,737,009.40	744,432.60	\$ 2,481,442	\$ 1,737,009	\$ 744,433	\$ 4,962,884
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,554,098	\$ 2,647,434	\$ 1,025,664	\$ 7,227,196
5.Dunwoodie 345 kV GIS Substation							\$ 19,842,091	\$ 11,447,328	\$ 6,713,846	\$ 38,003,264
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		279,866.08	119,942.61	\$ -	\$ 279,866	\$ 119,943	\$ 399,809
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		706,930.58		\$ -	\$ 706,931	\$ -	\$ 706,931
9.4	Utility PM and Project Oversight	1	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.5	Site Accommodation, Facilities, Storage	1	LS	176,732.64			\$ 176,733	\$ -	\$ -	\$ 176,733
	Engineering									
9.6	Design Engineering	1.00	LS		1,413,861.16		\$ -	\$ 1,413,861	\$ -	\$ 1,413,861
9.7	LiDAR /GPR	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		123,712.85		\$ -	\$ 123,713	\$ -	\$ 123,713
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		662,747.42		\$ -	\$ 662,747	\$ -	\$ 662,747
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,732.64		\$ -	\$ 176,733	\$ -	\$ 176,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,019.79		\$ -	\$ 53,020	\$ -	\$ 53,020
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,505,000.00	\$ -	\$ -	\$ 2,505,000	\$ 2,505,000
9.17	Legal Fees (Real estate)	1.00	LS		-	75,150.00	\$ -	\$ -	\$ 75,150	\$ 75,150
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,280,000	\$ -	\$ -	\$ 1,280,000	\$ 1,280,000
9.20	Sales Tax on Materials	8.80%	LS	19,842,090.70			\$ 1,746,104	\$ -	\$ -	\$ 1,746,104
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		38,003.26		\$ -	\$ 38,003	\$ -	\$ 38,003
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,922,837	\$ 3,828,536	\$ 3,989,193	\$ 9,740,565

NEXtera Energy- TO44 Enhanced 2

6.Elwood 138 kV Substation Upgrades

Total: \$ 7,946,839

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
6.Elwood 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT	\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563
SUBTOTAL (Costs):	\$ 3,848,823	\$ 1,325,499	\$ 437,852	\$ 5,612,175
CONTRACTOR MARK-UP (OH&P)	\$ 692,788	\$ 238,590	\$ 78,813	\$ 1,010,191
SUBTOTAL:	\$ 4,541,612	\$ 1,564,089	\$ 516,666	\$ 6,622,366
CONTINGENCY ON ENTIRE PROJECT	\$ 908,322	\$ 312,818	\$ 103,333	\$ 1,324,473
TOTAL:	\$ 5,449,934	\$ 1,876,907	\$ 619,999	\$ 7,946,839

Description of Work: Replace the existing 80MVAR reactor (1 block) at the exisitng elwood 138kv station with an 80 MVAR reactor (2 blocks of 40 MVAR)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	1	EA	3,226,531.00	3,520.00	880.00	\$ 3,226,531	\$ 3,520	\$ 880	\$ 3,230,931
4.21	Transport & Testing- Shunt Reactor	1	EA		198,400.00	128,600.00	\$ -	\$ 198,400	\$ 128,600	\$ 327,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,226,531	\$ 201,920	\$ 129,480	\$ 3,557,931
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable			7.40	3.33	2.22				
6.15	Ground Continuity Conductor			13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.Elwood 138 kV Substation Upgrades							\$ 3,498,692	\$ 458,776	\$ 267,144	\$ 4,224,612
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,407.20	10,888.80	\$ -	\$ 25,407	\$ 10,889	\$ 36,296
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		168,984.49		\$ -	\$ 168,984	\$ -	\$ 168,984
9.4	Utility PM and Project Oversight	1	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.5	Site Accommodation, Facilities, Storage	1	LS	42,246.12			\$ 42,246	\$ -	\$ -	\$ 42,246
	Engineering									
9.6	Design Engineering	1.00	LS		337,968.98		\$ -	\$ 337,969	\$ -	\$ 337,969
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		29,572.29		\$ -	\$ 29,572	\$ -	\$ 29,572
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		158,422.96		\$ -	\$ 158,423	\$ -	\$ 158,423
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		42,246.12		\$ -	\$ 42,246	\$ -	\$ 42,246
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		12,673.84		\$ -	\$ 12,674	\$ -	\$ 12,674
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 158,000	\$ -	\$ -	\$ 158,000	\$ 158,000
9.20	Sales Tax on Materials	8.80%	LS	3,498,692.30			\$ 307,885	\$ -	\$ -	\$ 307,885
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,224.61		\$ -	\$ 4,225	\$ -	\$ 4,225
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 350,131	\$ 866,723	\$ 170,709	\$ 1,387,563

NEXtera Energy- TO44 Enhanced 2

7.Jamaica 138 kV Substation Upgrades

Total: \$ 11,938,401

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
7.Jamaica 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 22,215	\$ 25,388	\$ 15,868	\$ 63,470
3. SUBSTATION STRUCTURES	\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPTMENT	\$ 2,502,588	\$ 1,455,977	\$ 860,076	\$ 4,818,641
5. LOW VOLTAGE & CONTROL CABLE	\$ 74,695	\$ 20,198	\$ 4,040	\$ 98,933
6. CONDUIT & CABLE TRENCH	\$ 809,758	\$ 432,740	\$ 219,808	\$ 1,462,306
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 357,995	\$ 784,055	\$ 270,258	\$ 1,412,308
SUBTOTAL (Costs):	\$ 4,026,257	\$ 2,951,841	\$ 1,452,976	\$ 8,431,074
CONTRACTOR MARK-UP (OH&P)	\$ 724,726	\$ 531,331	\$ 261,536	\$ 1,517,593
SUBTOTAL:	\$ 4,750,984	\$ 3,483,172	\$ 1,714,512	\$ 9,948,668
CONTINGENCY ON ENTIRE PROJECT	\$ 950,197	\$ 696,634	\$ 342,902	\$ 1,989,734
TOTAL:	\$ 5,701,181	\$ 4,179,806	\$ 2,057,414	\$ 11,938,401

Description of Work: Add an additional terminal and two GIB CB at the existing Jamaica 138kV substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.Jamaica 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	138kV, Circuit Breaker (GIS), outdoor rated	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, GIS Bus support-1 Ph, low	2	CY	703.89	804.44	502.78	\$ 1,647	\$ 1,882	\$ 1,176	\$ 4,706
2.26	138kV, Disconnect Switch	2	CY	703.89	804.44	502.78	\$ 1,492	\$ 1,705	\$ 1,066	\$ 4,264
2.27	138kV, Cable sealing end	1	CY	703.89	804.44	502.78	\$ 746	\$ 853	\$ 533	\$ 2,132
2.28	138kV, Surge arrester	2	CY	703.89	804.44	502.78	\$ 1,119	\$ 1,279	\$ 799	\$ 3,198
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 22,215	\$ 25,388	\$ 15,868	\$ 63,470
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, GIL Bus support-1 Ph, low	6	EA	2,782.00	1,919.84	1,279.89	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.15	138kV, Disconnect Switch	2	EA	4,896.84	4,896.84	2,448.42	\$ 9,794	\$ 9,794	\$ 4,897	\$ 24,484
3.16	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.17	138kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.22	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 45,726	\$ 32,857	\$ 20,272	\$ 98,855
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker (GIS), outdoor rated	2	EA	875,000.00	525,000.00	350,000.00	\$ 1,750,000	\$ 1,050,000	\$ 700,000	\$ 3,500,000
4.24	138kV, Circuit Breaker, AIS breaker	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.25	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.26	138kV, Cable sealing end	3	EA	11,600.00	5,460.00	2,340.00	\$ 34,800	\$ 16,380	\$ 7,020	\$ 58,200
4.27	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.28	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.29	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.30	345/138kV Gas-Insulated Bus Conductor	831	LF	550.00	275.00	82.50	\$ 457,050	\$ 228,525	\$ 68,558	\$ 754,133
4.31	345/138kV Gas-Insulated Bus Conductor-elbow	24	EA	2,500.00	1,250.00	375.00	\$ 60,000	\$ 30,000	\$ 9,000	\$ 99,000
4.32	Transport & Testing- GIL	1	LS		81,162.00	54,108.00	\$ -	\$ 81,162	\$ 54,108	\$ 135,270
TOTAL - MAJOR EQUIPMENT							\$ 2,502,588	\$ 1,455,977	\$ 860,076	\$ 4,818,641
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	14,100	LF	5.30	1.43	0.29	\$ 74,695	\$ 20,198	\$ 4,040	\$ 98,933
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 74,695	\$ 20,198	\$ 4,040	\$ 98,933
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	650	LF	266.73	202.15	100.00	\$ 173,375	\$ 131,395	\$ 65,003	\$ 369,773
6.9	138kV UG- Cable	1,950	LF	145.00	87.00	58.00	\$ 282,750	\$ 169,650	\$ 113,100	\$ 565,500
6.10	138kV UG- Termination	12	EA	27,805.00	9,846.48	2,813.28	\$ 333,660	\$ 118,158	\$ 33,759	\$ 485,577
6.11	345kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	650	LF	7.40	3.33	2.22	\$ 4,808	\$ 2,165	\$ 1,443	\$ 8,416
6.15	Ground Continuity Conductor	650	LF	13.04	7.53	5.02	\$ 8,475	\$ 4,893	\$ 3,262	\$ 16,630
TOTAL - CONDUIT & CABLE TRENCH							\$ 809,758	\$ 432,740	\$ 219,808	\$ 1,462,306
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,481,442.00	1,737,009.40	744,432.60	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
7.Jamaica 138 kV Substation Upgrades							\$ 3,668,263	\$ 2,167,785	\$ 1,182,719	\$ 7,018,767
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		117,267.64	50,257.56	\$ -	\$ 117,268	\$ 50,258	\$ 167,525
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		35,187.67		\$ -	\$ 35,188	\$ -	\$ 35,188
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		140,750.67		\$ -	\$ 140,751	\$ -	\$ 140,751
9.4	Utility PM and Project Oversight	1	LS		35,187.67		\$ -	\$ 35,188	\$ -	\$ 35,188
9.5	Site Accommodation, Facilities, Storage	1	LS	35,187.67			\$ 35,188	\$ -	\$ -	\$ 35,188
	Engineering									
9.6	Design Engineering	1.00	LS		281,501.34		\$ -	\$ 281,501	\$ -	\$ 281,501
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		24,631.37		\$ -	\$ 24,631	\$ -	\$ 24,631
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		131,953.75		\$ -	\$ 131,954	\$ -	\$ 131,954
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		35,187.67		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		10,556.30		\$ -	\$ 10,556	\$ -	\$ 10,556
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 220,000	\$ -	\$ -	\$ 220,000	\$ 220,000
9.20	Sales Tax on Materials	8.80%	LS	3,668,262.67			\$ 322,807	\$ -	\$ -	\$ 322,807
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,018.77		\$ -	\$ 7,019	\$ -	\$ 7,019
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 357,995	\$ 784,055	\$ 270,258	\$ 1,412,308

NEXtera Energy- TO44 Enhanced 2

8.Newbridge 345/138 kV GIS Substation Upgrades

Total: \$ 89,858,233

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
8.Newbridge 345/138 kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS	\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION STRUCTURES	\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPTMENT	\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH	\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID	\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE	\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373
Turnkey cost (HVDC, GIS)	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
Non-Turnkey cost	\$ 21,927,804	\$ 16,411,369	\$ 6,857,489	\$ 45,196,662
SUBTOTAL (Costs):	\$ 32,092,804	\$ 22,510,369	\$ 10,923,489	\$ 65,526,662
CONTRACTOR MARK-UP (OH&P)	\$ 4,556,905	\$ 3,319,986	\$ 1,478,308	\$ 9,355,199
SUBTOTAL:	\$ 36,649,708	\$ 25,830,355	\$ 12,401,797	\$ 74,881,861
CONTINGENCY ON ENTIRE PROJECT	\$ 7,329,942	\$ 5,166,071	\$ 2,480,359	\$ 14,976,372
TOTAL:	\$ 43,979,650	\$ 30,996,426	\$ 14,882,157	\$ 89,858,233

Description of Work: Remove the northern bay at the existing Newbridge Road 138kV station for the construction of the new 345/138kV GIS.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.Newbridge 345/138 kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	180,000.00	120,000.00	\$ -	\$ 180,000	\$ 120,000	\$ 300,000
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 180,000	\$ 120,000	\$ 300,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.14	345kV, Shunt Reactor with oil containment-25MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,482	CY	703.89	804.44	502.78	\$ 1,043,158	\$ 1,192,180	\$ 745,113	\$ 2,980,450
2.20	345kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	546	CY	703.89	804.44	502.78	\$ 384,659	\$ 439,610	\$ 274,756	\$ 1,099,026
2.32	Precast Firewall for transformer, PARs, reactors	8,220	SF	25.00	15.00	10.00	\$ 205,500	\$ 123,300	\$ 82,200	\$ 411,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,041,415	\$ 2,221,489	\$ 1,393,568	\$ 5,656,472
3. SUBSTATION	#REF!									
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 429,813	\$ 203,612	\$ 99,602	\$ 733,027
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-25MVAR	2	EA	1,900,130.50	3,520.00	880.00	\$ 3,800,261	\$ 7,040	\$ 1,760	\$ 3,809,061
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		240,400.00	156,600.00	\$ -	\$ 480,800	\$ 313,200	\$ 794,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	12	BKR	847,083.33	508,250.00	338,833.33	\$ 10,165,000	\$ 6,099,000	\$ 4,066,000	\$ 20,330,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	30	LF	550.00	275.00	82.50	\$ 16,500	\$ 8,250	\$ 2,475	\$ 27,225.00
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.31	Transport & Testing- GIL	1	LS		2,970.00	1,980.00	\$ -	\$ 2,970	\$ 1,980	\$ 4,950.00
TOTAL - MAJOR EQUIPMENT							\$ 18,401,761	\$ 7,318,980	\$ 4,860,895	\$ 30,581,636
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	6,000	LF	5.30	1.43	0.29	\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 31,785	\$ 8,595	\$ 1,719	\$ 42,099
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit	1,287	LF	266.73	202.15	100.00	\$ 343,363	\$ 260,223	\$ 128,736	\$ 732,322
6.9	138kV UG- Cable	3,862	LF	145.00	87.00	58.00	\$ 559,976	\$ 335,985	\$ 223,990	\$ 1,119,951
6.10	138kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.11	345kV UG- Conduit	2,267	LF	266.73	202.15	100.00	\$ 604,666	\$ 458,256	\$ 226,706	\$ 1,289,628
6.12	345kV UG- Cable	6,801	LF	167.00	100.20	66.80	\$ 1,135,742	\$ 681,445	\$ 454,297	\$ 2,271,484
6.13	345kV UG- Termination	24	EA	27,805.00	9,846.48	2,813.28	\$ 667,320	\$ 236,316	\$ 67,519	\$ 971,154
6.14	Fiber Optic Cable	3,554	LF	7.40	3.33	2.22	\$ 26,291	\$ 11,838	\$ 7,892	\$ 46,020
6.15	Ground Continuity Conductor	3,554	LF	13.04	7.53	5.02	\$ 46,344	\$ 26,753	\$ 17,835	\$ 90,932
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,064,400	\$ 2,260,091	\$ 1,200,974	\$ 7,525,466
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,100	LF	2.09	3.42	1.46	\$ 10,664	\$ 17,418	\$ 7,465	\$ 35,547
7.2	Caweld, DSA, 4/0 , T, CROSS	144	EA	165.00	75.00		\$ 23,760	\$ 10,800	\$ -	\$ 34,560
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,624	\$ 36,318	\$ 8,365	\$ 95,307
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,926,829.03	2,048,780.32	878,048.71	\$ 2,926,829	\$ 2,048,780	\$ 878,049	\$ 5,853,658
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Ann	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.15	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.16	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.19	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.20	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.21	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 4,172,141	\$ 3,175,330	\$ 1,245,811	\$ 8,593,282
8.Newbridge 345/138 kV GIS Substation Upgrades							\$ 29,191,940	\$ 15,404,415	\$ 8,930,934	\$ 53,527,289
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		495,962.21	212,555.23	\$ -	\$ 495,962	\$ 212,555	\$ 708,517
Project Management, Material Handling & Amenities										
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,327,891.55		\$ -	\$ 1,327,892	\$ -	\$ 1,327,892
9.4	Utility PM and Project Oversight	1	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.5	Site Accommodation, Facilities, Storage	1	LS	331,972.89			\$ 331,973	\$ -	\$ -	\$ 331,973
Engineering										
9.6	Design Engineering	1.00	LS		2,655,783.10		\$ -	\$ 2,655,783	\$ -	\$ 2,655,783
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		232,381.02		\$ -	\$ 232,381	\$ -	\$ 232,381
Testing & Commissioning										
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		1,244,898.33		\$ -	\$ 1,244,898	\$ -	\$ 1,244,898
Permitting and Additional Costs										
9.11	Physical Security	-	LS		62,196.12		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		331,972.89		\$ -	\$ 331,973	\$ -	\$ 331,973
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		99,591.87		\$ -	\$ 99,592	\$ -	\$ 99,592
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	649,844.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	19,495.32	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 1,780,000	\$ -	\$ -	\$ 1,780,000	\$ 1,780,000
9.20	Sales Tax on Materials	8.80%	LS	29,191,939.93			\$ 2,568,891	\$ -	\$ -	\$ 2,568,891
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		53,527.29		\$ -	\$ 53,527	\$ -	\$ 53,527
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,900,864	\$ 7,105,954	\$ 1,992,555	\$ 11,999,373

NEXtera Energy- TO44 Enhanced 2

9.Rainey 345kV GIS Substation Upgrades

Total: \$ 45,946,157

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
9.Rainey 345kV GIS Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870
2. SUBSTATION FOUNDATIONS	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID	\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE	\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 8,610,766	\$ 8,924,115	\$ 5,696,359	\$ 23,231,241
SUBTOTAL (Costs):	\$ 13,740,766	\$ 12,002,115	\$ 7,748,359	\$ 33,491,241
CONTRACTOR MARK-UP (OH&P)	\$ 1,857,738	\$ 1,791,021	\$ 1,148,465	\$ 4,797,223
SUBTOTAL:	\$ 15,598,504	\$ 13,793,136	\$ 8,896,824	\$ 38,288,464
CONTINGENCY ON ENTIRE PROJECT	\$ 3,119,701	\$ 2,758,627	\$ 1,779,365	\$ 7,657,693
TOTAL:	\$ 18,718,205	\$ 16,551,763	\$ 10,676,189	\$ 45,946,157

Description of Work: Construct a new Rainey 345 kV GIS substation and connect back to the existing Rainey 345kV, further interconnecting the Rainey East and West ring buses.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.Rainey 345kV GIS Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,856	\$ 5,904	\$ 14,760
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	989	SY	4.85	7.20	4.80	\$ 4,796	\$ 7,120	\$ 4,747	\$ 16,663
1.4	Strip and Dispose Top Soil	1,323	CY		24.50	10.50	\$ -	\$ 32,412	\$ 13,891	\$ 46,303
1.5	Site Grading- Excavation for Substation Pad	3,969	CY		9.00	6.00	\$ -	\$ 35,719	\$ 23,813	\$ 59,532
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	2,143	CY		21.00	9.00	\$ -	\$ 45,006.19	\$ 19,288.37	\$ 64,294.56
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,215	CY		2.40	1.60	\$ -	\$ 7,715	\$ 5,144	\$ 12,859
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,143	CY	25.00	2.40	1.60	\$ 53,579	\$ 5,144	\$ 3,429	\$ 62,151
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,969	SY	11.00	6.00	4.00	\$ 43,657	\$ 23,813	\$ 15,875	\$ 83,345
1.11	Site Surfacing - Aggregate 6" Thick	3,969	SY	16.50	4.50	3.00	\$ 65,485	\$ 17,860	\$ 11,906	\$ 95,251
1.12	7' Station Fence w/ Barbed Wire & Grounding	726	LF	13.85	13.85	6.92	\$ 10,054	\$ 10,054	\$ 5,027	\$ 25,134
1.13	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	109,761.60	38,400.00	25,368.00	\$ 109,762	\$ 38,400	\$ 25,368	\$ 173,530
1.16	Seeding	3,000	SF	1.50	1.50	1.00	\$ 4,500	\$ 4,500	\$ 3,000	\$ 12,000
1.17	Erosion Control-Silt fence install & remove	1,200	LF	2.41	3.16	0.72	\$ 2,892	\$ 3,792	\$ 864	\$ 7,548
1.18	Temporary fencing	800	LF	7.50	5.25	2.25	\$ 6,000	\$ 4,200	\$ 1,800	\$ 12,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 311,324	\$ 248,835	\$ 141,711	\$ 701,870

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	3,207	LF	266.73	202.15	100.00	\$ 855,326	\$ 648,223	\$ 320,686	\$ 1,824,235
6.12	345kV UG- Cable	9,620	LF	167.00	100.20	66.80	\$ 1,606,557	\$ 963,934	\$ 642,623	\$ 3,213,113
6.13	345kV UG- Termination	18	EA	27,805.00	9,846.48	2,813.28	\$ 500,490	\$ 177,237	\$ 50,639	\$ 728,366
6.14	Fiber Optic Cable	3,207	LF	7.40	3.33	2.22	\$ 23,720	\$ 10,680	\$ 7,120	\$ 41,520
6.15	Ground Continuity Conductor	3,207	LF	13.04	7.53	5.02	\$ 41,812	\$ 24,137	\$ 16,091	\$ 82,040
TOTAL - CONDUIT & CABLE TRENCH							\$ 3,027,905	\$ 1,824,211	\$ 1,037,159	\$ 5,889,274
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,280	LF	2.09	3.42	1.46	\$ 6,858	\$ 11,202	\$ 4,801	\$ 22,862
7.2	Caweld, DSA, 4/0 , T, CROSS	164	EA	165.00	75.00		\$ 27,060	\$ 12,300	\$ -	\$ 39,360
7.3	Ground Rod, 3/4" x 15'	53	EA	135.00	67.50	7.50	\$ 7,196	\$ 3,598	\$ 400	\$ 11,193
TOTAL - GROUND GRID							\$ 41,114	\$ 27,100	\$ 5,201	\$ 73,415
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.13	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.14	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.15	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.16	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,173,654	\$ 2,446,529	\$ 976,124	\$ 6,596,307
9.Rainey 345kV GIS Substation Upgrades							\$ 12,486,425	\$ 8,541,737	\$ 4,785,358	\$ 25,813,520
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		286,898.32	122,956.42	\$ -	\$ 286,898	\$ 122,956	\$ 409,855
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		622,140.82		\$ -	\$ 622,141	\$ -	\$ 622,141
9.4	Utility PM and Project Oversight	1	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.5	Site Accommodation, Facilities, Storage	1	LS	155,535.20			\$ 155,535	\$ -	\$ -	\$ 155,535
	Engineering									
9.6	Design Engineering	1.00	LS		1,244,281.63		\$ -	\$ 1,244,282	\$ -	\$ 1,244,282
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		108,874.64		\$ -	\$ 108,875	\$ -	\$ 108,875
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		583,257.02		\$ -	\$ 583,257	\$ -	\$ 583,257
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		62,196.12		\$ -	\$ 62,196	\$ -	\$ 62,196
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		155,535.20		\$ -	\$ 155,535	\$ -	\$ 155,535
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		46,660.56		\$ -	\$ 46,661	\$ -	\$ 46,661
9.15	Laydown Lease		LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,874,704.00	\$ -	\$ -	\$ 1,874,704	\$ 1,874,704
9.17	Legal Fees (Real estate)	1.00	LS		-	56,241.12	\$ -	\$ -	\$ 56,241	\$ 56,241
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 900,000	\$ -	\$ -	\$ 900,000	\$ 900,000
9.20	Sales Tax on Materials	8.80%	LS	12,486,425.49			\$ 1,098,805	\$ -	\$ -	\$ 1,098,805
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,813.52		\$ -	\$ 25,814	\$ -	\$ 25,814
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,254,341	\$ 3,460,378	\$ 2,963,002	\$ 7,677,720

<u>NEXtera Energy- TO44 Enhanced 2</u>	
<u>10.Shore Road 138kV Substation Upgrades</u>	
Total:	\$ 13,943,860

	NEXtera Energy- T044 Enhanced 2				
		Material Supply	Labor Supply	Equip Supply	Total
10.Shore Road 138kV Substation Upgrades					
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$	9,922	\$ 10,764	\$ 6,052	\$ 26,737.53
2. SUBSTATION FOUNDATIONS	\$	241,411	\$ 275,899	\$ 172,437	\$ 689,746.97
3. SUBSTATION STRUCTURES	\$	135,326	\$ 72,142	\$ 35,749	\$ 243,217.06
4. MAJOR EQUIPMENT	\$	5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293.00
5. LOW VOLTAGE & CONTROL CABLE	\$	61,981	\$ 16,760	\$ 3,352	\$ 82,093.05
6. CONDUIT & CABLE TRENCH	\$	93,385	\$ 39,180	\$ 16,275	\$ 148,840.00
7. GROUND GRID	\$	2,925	\$ 2,335	\$ 610	\$ 5,870.50
8. CONTROL ENCLOSURE	\$	85,312	\$ 68,250	\$ 17,062	\$ 170,624.92
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$	630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,935.65
SUBTOTAL (Costs):	\$	6,942,247	\$ 2,219,499	\$ 685,612	\$ 9,847,359
CONTRACTOR MARK-UP (OH&P)	\$	1,249,604	\$ 399,510	\$ 123,410	\$ 1,772,525
SUBTOTAL:	\$	8,191,851	\$ 2,619,009	\$ 809,023	\$ 11,619,883
CONTINGENCY ON ENTIRE PROJECT	\$	1,638,370	\$ 523,802	\$ 161,805	\$ 2,323,976.6
TOTAL:	\$	9,830,222	\$ 3,142,811	\$ 970,827	\$ 13,943,860

Description of Work: Add a new 250 MVAR reactor at the existing Shore Road 138kV station (5 block of 50 MVAR)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 540	\$ 360	\$ 900
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	81	CY		24.50	10.50	\$ -	\$ 1,976	\$ 847	\$ 2,823
1.5	Site Grading- Excavation for Substation Pad	242	CY		9.00	6.00	\$ -	\$ 2,178	\$ 1,452	\$ 3,630
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	131	CY		21.00	9.00	\$ -	\$ 2,744.28	\$ 1,176.12	\$ 3,920.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	196	CY		2.40	1.60	\$ -	\$ 470	\$ 314	\$ 784
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	131	CY	25.00	2.40	1.60	\$ 3,267	\$ 314	\$ 209	\$ 3,790
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	242	SY	11.00	6.00	4.00	\$ 2,662	\$ 1,452	\$ 968	\$ 5,082
1.11	Site Surfacing - Aggregate 6" Thick	242	SY	16.50	4.50	3.00	\$ 3,993	\$ 1,089	\$ 726	\$ 5,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 9,922	\$ 10,764	\$ 6,052	\$ 26,738
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.23	138kV, Circuit Breaker, AIS breaker	4	CY	703.89	804.44	502.78	\$ 3,132	\$ 3,580	\$ 2,237	\$ 8,949
2.24	138kV, Bus support-3 Ph, low	5	CY	703.89	804.44	502.78	\$ 3,766	\$ 4,304	\$ 2,690	\$ 10,759
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 241,411	\$ 275,899	\$ 172,437	\$ 689,747
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	2	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	60	LF	25.00	184.94	123.29	\$ 1,500	\$ 11,096	\$ 7,398	\$ 19,994
3.22	AL. Bus fittings	1	LS	1,800.00	1,800.00	900.00	\$ 1,800	\$ 1,800	\$ 900	\$ 4,500
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 135,326	\$ 72,142	\$ 35,749	\$ 243,217
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	1	EA	5,484,953.00	3,520.00	880.00	\$ 5,484,953	\$ 3,520	\$ 880	\$ 5,489,353
4.21	Transport & Testing- Shunt Reactor	1	EA		204,400.00	132,600.00	\$ -	\$ 204,400	\$ 132,600	\$ 337,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	1	EA	112,000.00	13,559.00	5,811.00	\$ 112,000	\$ 13,559	\$ 5,811	\$ 131,370
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 5,681,973	\$ 251,002	\$ 153,318	\$ 6,086,293
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 93,385	\$ 39,180	\$ 16,275	\$ 148,840
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 6,312,236	\$ 736,333	\$ 404,855	\$ 7,453,423
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		39,941.55	17,117.81	\$ -	\$ 39,942	\$ 17,118	\$ 57,059
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		298,136.92		\$ -	\$ 298,137	\$ -	\$ 298,137
9.4	Utility PM and Project Oversight	1	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.5	Site Accommodation, Facilities, Storage	1	LS	74,534.23			\$ 74,534	\$ -	\$ -	\$ 74,534
	Engineering									
9.6	Design Engineering	1.00	LS		596,273.84		\$ -	\$ 596,274	\$ -	\$ 596,274
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		52,173.96		\$ -	\$ 10,435	\$ -	\$ 10,435
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		279,503.36		\$ -	\$ 279,503	\$ -	\$ 279,503
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		74,534.23		\$ -	\$ 74,534	\$ -	\$ 74,534
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		22,360.27		\$ -	\$ 22,360	\$ -	\$ 22,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	704,727.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,141.81	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	6,312,235.86			\$ 555,477	\$ -	\$ -	\$ 555,477
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,453.42		\$ -	\$ 7,453	\$ -	\$ 7,453
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 630,011	\$ 1,483,167	\$ 280,758	\$ 2,393,936

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.23	Concrete Retaining Wall- Rock excavation	396,294	CY		120.00	180.00	\$ -	\$ 47,555,232	\$ 71,332,848	\$ 118,888,080
1.24	Concrete Retaining Wall-Rock excavation-Hauling and disposal	267,498	CY		21.00	9.00	\$ -	\$ 5,617,461.78	\$ 2,407,483.62	\$ 8,024,945
1.25	Concrete Retaining Wall- Backfill & compaction	668,745	CY	10.00	30.00	20.00	\$ 6,687,455	\$ 20,062,364	\$ 13,374,909	\$ 40,124,727
1.26	Concrete Retaining Walll- Foundaiton and Wall	68,967	CY	325.00	195.00	130.00	\$ 22,414,275	\$ 13,448,565	\$ 8,965,710	\$ 44,828,550
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 29,886,197	\$ 124,478,741	\$ 142,056,673	\$ 296,421,611
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	880	CY	703.89	804.44	502.78	\$ 619,306	\$ 707,778	\$ 442,362	\$ 1,769,446
2.3	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	253	CY	703.89	804.44	502.78	\$ 178,393	\$ 203,877	\$ 127,423	\$ 509,693
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	700	CY	703.89	804.44	502.78	\$ 492,720	\$ 563,108	\$ 351,943	\$ 1,407,770
2.15	345kV, Shunt Reactor with oil containment-225MVAR	126	CY	703.89	804.44	502.78	\$ 88,690	\$ 101,359	\$ 63,350	\$ 253,399
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	180	CY	703.89	804.44	502.78	\$ 126,699	\$ 144,799	\$ 90,500	\$ 361,998
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	325	CY	703.89	804.44	502.78	\$ 228,763	\$ 261,443	\$ 163,402	\$ 653,608
2.20	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.32	Precast Firewall for transformer, PARs, reactors	2,100	SF	25.00	15.00	10.00	\$ 52,500	\$ 31,500	\$ 21,000	\$ 105,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,055,398	\$ 2,320,526	\$ 1,451,641	\$ 5,827,565
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	6	EA	48,100.00	28,860.00	19,240.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
3.3	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	16	EA	19,240.00	11,544.00	7,696.00	\$ 307,840	\$ 184,704	\$ 123,136	\$ 615,680
3.13	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,590	LF	25.00	184.94	123.29	\$ 39,750	\$ 294,051	\$ 196,034	\$ 529,836
3.22	AL. Bus fittings	1	LS	47,700.00	47,700.00	23,850.00	\$ 47,700	\$ 47,700	\$ 23,850	\$ 119,250
3.23	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,194,199	\$ 952,276	\$ 590,762	\$ 2,737,237
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	16	EA	57,720.00	34,632.00	23,088.00	\$ 923,520	\$ 554,112	\$ 369,408	\$ 1,847,040
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	2	EA	3,332,487.50	3,520.00	880.00	\$ 6,664,975	\$ 7,040	\$ 1,760	\$ 6,673,775
4.9	345kV, Shunt Reactor with oil containment-225MVAR	1	EA	3,026,425.00	3,520.00	880.00	\$ 3,026,425	\$ 3,520	\$ 880	\$ 3,030,825
4.10	Transport & Testing- Shunt Reactor	3	EA		357,900.40	234,933.60	\$ -	\$ 1,073,701	\$ 704,801	\$ 1,778,502
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	641,250.00	384,750.00	256,500.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker	9	EA	350,000.00	57,239.00	24,531.00	\$ 3,150,000	\$ 515,151	\$ 220,779	\$ 3,885,930
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,194,419.50	716,651.70	477,767.80	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 14,085,266	\$ 2,251,804	\$ 1,339,748	\$ 17,676,818
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	47,700	LF	5.30	1.43	0.29	\$ 252,691	\$ 68,330	\$ 13,666	\$ 334,687
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 252,691	\$ 68,330	\$ 13,666	\$ 334,687
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	9,000	LF	11.15	10.80	5.40	\$ 100,350	\$ 97,200	\$ 48,600	\$ 246,150
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	2,018	LF	266.50	53.04	13.26	\$ 537,664	\$ 107,008	\$ 26,752	\$ 671,424
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00				\$ -
6.9	138kV UG- Cable		LF	145.00	87.00	58.00				\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28				\$ -
6.11	345kV UG- Conduit	466	LF	266.73	202.15	100.00				\$ -
6.12	345kV UG- Cable	1,398	LF	167.00	100.20	66.80				\$ -
6.13	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				\$ -
6.14	Fiber Optic Cable	466	LF	7.40	3.33	2.22				\$ -
6.15	Ground Continuity Conductor	466	LF	13.04	7.53	5.02				\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 638,014	\$ 204,208	\$ 75,352	\$ 917,574
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,277	LF	2.09	3.42	1.46	\$ 36,126	\$ 59,006	\$ 25,288	\$ 120,421
7.2	Caweld, DSA, 4/0 , T, CROSS	462	EA	165.00	75.00		\$ 76,230	\$ 34,650	\$ -	\$ 110,880
7.3	Ground Rod, 3/4" x 15'	410	EA	135.00	67.50	7.50	\$ 55,350	\$ 27,675	\$ 3,075	\$ 86,100
TOTAL - GROUND GRID							\$ 167,706	\$ 121,331	\$ 28,363	\$ 317,401

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	542,947.99	380,063.60	162,884.40	\$ 542,948	\$ 380,064	\$ 162,884	\$ 1,085,896
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,382,479	\$ 1,101,238	\$ 392,741	\$ 2,876,458
11.Sprain Brook 345kV Substation Expansion							\$ 49,661,950	\$ 131,498,455	\$ 145,948,946	\$ 327,109,351
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,710,659.03	4,161,711.01	\$ -	\$ 9,710,659	\$ 4,161,711	\$ 13,872,370
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,271,093.51		\$ -	\$ 3,271,094	\$ -	\$ 3,271,094
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.00	LS		13,084,374.02		\$ -	\$ 13,084,374	\$ -	\$ 13,084,374
9.4	Utility PM and Project Oversight	1.00	LS		3,271,093.51		\$ -	\$ 3,271,094	\$ -	\$ 3,271,094
9.5	Site Accommodation, Facilities, Storage	1.00	LS	3,271,093.51			\$ 3,271,094	\$ -	\$ -	\$ 3,271,094
	Engineering									
9.6	Design Engineering	1.00	LS		26,168,748.04		\$ -	\$ 26,168,748	\$ -	\$ 26,168,748
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		2,289,765.45		\$ -	\$ 2,289,765	\$ -	\$ 2,289,765
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		12,266,600.64		\$ -	\$ 12,266,601	\$ -	\$ 12,266,601
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		3,271,093.51		\$ -	\$ 3,271,094	\$ -	\$ 3,271,094
9.13	Environmental-special studies/investigation	-	LS				\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		981,328.05		\$ -	\$ 981,328	\$ -	\$ 981,328
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	2,029,600.00	\$ -	\$ -	\$ 2,029,600	\$ 2,029,600
9.17	Legal Fees (Real estate)	1.00	LS		-	60,888.00	\$ -	\$ -	\$ 60,888	\$ 60,888
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 12,100,000	\$ -	\$ -	\$ 12,100,000	\$ 12,100,000
9.20	Sales Tax on Materials	8.80%	LS	49,661,949.70			\$ 4,370,252	\$ -	\$ -	\$ 4,370,252
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		327,109.35		\$ -	\$ 327,109	\$ -	\$ 327,109
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,641,345	\$ 74,655,515	\$ 18,361,299	\$ 100,658,159

NEXtera Energy- TO44 Enhanced 2

12 - Station 36a Sprain Brook HVDC 1200MW Converter Station

Total: \$ 454,943,796

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,265,365	\$ 6,143,166	\$ 7,447,195	\$ 15,855,727
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ 238,706	\$ 172,356	\$ 40,224	\$ 451,286
8. CONTROL ENCLOSURE	\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,232,085	\$ 4,074,870	\$ 15,022,185	\$ 35,329,140
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 18,816,313	\$ 10,454,517	\$ 22,525,636	\$ 51,796,466
SUBTOTAL (Costs):	\$ 198,816,313	\$ 70,454,517	\$ 82,525,636	\$ 351,796,466
CONTRACTOR MARK-UP (OH&P)	\$ 14,186,936	\$ 5,481,813	\$ 7,654,615	\$ 27,323,364
SUBTOTAL:	\$ 213,003,249	\$ 75,936,330	\$ 90,180,251	\$ 379,119,830
CONTINGENCY ON ENTIRE PROJECT	\$ 42,600,650	\$ 15,187,266	\$ 18,036,050	\$ 75,823,966
TOTAL:	\$ 255,603,899	\$ 91,123,596	\$ 108,216,301	\$ 454,943,796

Description of Work: Construct a new Sprain Brook 1200MW converter station, with a transition from 320kV DC to 345kV AC and tie into the expanded Sprain Brook 345kV GIS station and the Northport-Sprain Brook HVDC cable.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 105,000	\$ 70,000	\$ 175,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,002	SY	4.85	7.20	4.80	\$ 4,861	\$ 7,216	\$ 4,811	\$ 16,887
1.4	Strip and Dispose Top Soil	8,067	CY		24.50	10.50	\$ -	\$ 197,633	\$ 84,700	\$ 282,333
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	4,033	CY		9.00	6.00	\$ -	\$ 36,300	\$ 24,200	\$ 60,500
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	36,300	CY		120.00	180.00	\$ -	\$ 4,356,000.00	\$ 6,534,000.00	\$ 10,890,000
1.7	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	43,560	CY		21.00	9.00	\$ -	\$ 914,760.00	\$ 392,040.00	\$ 1,306,800
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,089	CY		2.40	1.60	\$ -	\$ 2,614	\$ 1,742	\$ 4,356
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	43,560	CY	25.00	2.40	1.60	\$ 1,089,000	\$ 104,544	\$ 69,696	\$ 1,263,240
1.10	Install substation 8" pad base	12,100	SY	11.00	6.00	4.00	\$ 133,100	\$ 72,600	\$ 48,400	\$ 254,100
1.11	Site Surfacing - Aggregate 6" Thick	18,150	SY	16.50	4.50	3.00	\$ 299,475	\$ 81,675	\$ 54,450	\$ 435,600
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,872	LF	13.85	13.85	6.92	\$ 25,923	\$ 25,923	\$ 12,962	\$ 64,809
1.13	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.16	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.17	Erosion Control-Silt fence install & remove	3,089	LF	2.41	3.16	0.72	\$ 7,444	\$ 9,761	\$ 2,224	\$ 19,429
1.18	Temporary fencing	2,059	LF	7.50	5.25	2.25	\$ 15,444	\$ 10,811	\$ 4,633	\$ 30,888
1.19	Substation entrance with asphalt	812	SY	19.50	26.00	19.50	\$ 15,832	\$ 21,109	\$ 15,832	\$ 52,773
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,265,365	\$ 6,143,166	\$ 7,447,195	\$ 15,855,727
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Buuilding		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA	852,222.22	511,333.33	340,888.89	\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Conduit	1,001	LF	266.73	202.15	100.00				
6.9	345kV UG- Cable	3,153	LF	167.00	100.20	66.80				
6.10	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28				
6.13	Fiber Optic Cable	1,051	LF	7.40	3.33	2.22				
6.14	Ground Continuity Conductor	1,051	LF	13.04	7.53	5.02				
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	24,417	LF	2.09	3.42	1.46	\$ 51,056	\$ 83,391	\$ 35,739	\$ 170,186
7.2	Caweld, DSA, 4/0 , T, CROSS	648	EA	165.00	75.00		\$ 106,920	\$ 48,600	\$ -	\$ 155,520
7.3	Ground Rod, 3/4" x 15'	598	EA	135.00	67.50	7.50	\$ 80,730	\$ 40,365	\$ 4,485	\$ 125,580
TOTAL - GROUND GRID							\$ 238,706	\$ 172,356	\$ 40,224	\$ 451,286
8. CONTROL ENCLOSURE										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
12 - Station 36a Sprain Brook HVDC 1200MW Converter Station							\$ 182,584,228	\$ 66,379,647	\$ 67,503,451	\$ 316,467,326
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		485,908.43	208,246.47	\$ -	\$ 485,908	\$ 208,246	\$ 694,155
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		658,693.03		\$ -	\$ 658,693	\$ -	\$ 658,693
9.4	Utility PM and Project Oversight	1	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.5	Site Accommodation, Facilities, Storage	1	LS	164,673.26			\$ 164,673	\$ -	\$ -	\$ 164,673
	Engineering									
9.6	Design Engineering	1.00	LS		1,317,386.06		\$ -	\$ 1,317,386	\$ -	\$ 1,317,386
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		115,271.28		\$ -	\$ 115,271	\$ -	\$ 115,271
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		617,524.71		\$ -	\$ 617,525	\$ -	\$ 617,525
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		164,673.26		\$ -	\$ 164,673	\$ -	\$ 164,673
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		49,401.98		\$ -	\$ 49,402	\$ -	\$ 49,402
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,558,096.00	\$ -	\$ -	\$ 5,558,096	\$ 5,558,096
9.17	Legal Fees (Real estate)	1.00	LS		-	166,742.88	\$ -	\$ -	\$ 166,743	\$ 166,743
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 9,080,000	\$ -	\$ -	\$ 9,080,000	\$ 9,080,000
9.20	Sales Tax on Materials	8.80%	LS	182,584,227.65			\$ 16,067,412	\$ -	\$ -	\$ 16,067,412
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		316,467.33		\$ -	\$ 316,467	\$ -	\$ 316,467
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,232,085	\$ 4,074,870	\$ 15,022,185	\$ 35,329,140

NEXtera Energy- TO44 Enhanced 2

13- Station 30a New Northport HVDC 1200MW Converter Station

Total: \$ 448,740,863

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
13- Station 30a New Northport HVDC 1200MW Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,491,747	\$ 1,285,611	\$ 729,878	\$ 3,507,235
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 6,063,620	\$ 3,718,325	\$ 2,122,341	\$ 11,904,286
7. GROUND GRID	\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE	\$ 293,437	\$ 234,750	\$ 58,687	\$ 586,875
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,714,737	\$ 3,872,639	\$ 10,404,395	\$ 30,991,771
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 24,788,558	\$ 9,273,986	\$ 13,353,320	\$ 47,415,864
SUBTOTAL (Costs):	\$ 204,788,558	\$ 69,273,986	\$ 73,353,320	\$ 347,415,864
CONTRACTOR MARK-UP (OH&P)	\$ 15,261,940	\$ 5,269,317	\$ 6,003,598	\$ 26,534,855
SUBTOTAL:	\$ 220,050,498	\$ 74,543,303	\$ 79,356,918	\$ 373,950,719
CONTINGENCY ON ENTIRE PROJECT	\$ 44,010,100	\$ 14,908,661	\$ 15,871,384	\$ 74,790,144
TOTAL:	\$ 264,060,598	\$ 89,451,964	\$ 95,228,301	\$ 448,740,863

Description of Work: Construct a new Northport 1200MW converter station, with a transition from 320kV DC to 138kV AC and tie into the new Northport 138kV GIS with three 138kV lines.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13- Station 30a New Northport HVDC 1200MW Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	5.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 105,000	\$ 70,000	\$ 175,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,200	SY	4.85	7.20	4.80	\$ 10,670	\$ 15,840	\$ 10,560	\$ 37,070
1.4	Strip and Dispose Top Soil	8,067	CY		24.50	10.50	\$ -	\$ 197,633	\$ 84,700	\$ 282,333
1.5	Site Grading- Excavation for Substation Pad	24,200	CY		9.00	6.00	\$ -	\$ 217,800	\$ 145,200	\$ 363,000
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	13,068	CY		21.00	9.00	\$ -	\$ 274,428.00	\$ 117,612.00	\$ 392,040.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	19,602	CY		2.40	1.60	\$ -	\$ 47,045	\$ 31,363	\$ 78,408
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	13,068	CY	25.00	2.40	1.60	\$ 326,700	\$ 31,363	\$ 20,909	\$ 378,972
1.9	Install substation 8" pad base	12,100	SY	11.00	6.00	4.00	\$ 133,100	\$ 72,600	\$ 48,400	\$ 254,100
1.10	Site Surfacing - Aggregate 6" Thick	18,150	SY	16.50	4.50	3.00	\$ 299,475	\$ 81,675	\$ 54,450	\$ 435,600
1.11	7' Station Fence w/ Barbed Wire & Grounding	1,922	LF	13.85	13.85	6.92	\$ 26,616	\$ 26,616	\$ 13,308	\$ 66,540
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	625,766.40	161,280.00	106,545.60	\$ 625,766	\$ 161,280	\$ 106,546	\$ 893,592
1.15	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.16	Erosion Control-Silt fence install & remove	3,171	LF	2.41	3.16	0.72	\$ 7,643	\$ 10,021	\$ 2,283	\$ 19,947
1.17	Temporary fencing	2,114	LF	7.50	5.25	2.25	\$ 15,857	\$ 11,100	\$ 4,757	\$ 31,713
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,491,747	\$ 1,285,611	\$ 729,878	\$ 3,507,235
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Buiilding	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	7,020	LF	266.73	202.15	100.00	\$ 1,872,451	\$ 1,419,068	\$ 702,034	\$ 3,993,554
6.9	138kV UG- Cable	22,113	LF	145.00	87.00	58.00	\$ 3,206,385	\$ 1,923,831	\$ 1,282,554	\$ 6,412,770
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	7,371	LF	7.40	3.33	2.22	\$ 54,523	\$ 24,550	\$ 16,367	\$ 95,440
6.14	Ground Continuity Conductor	7,371	LF	13.04	7.53	5.02	\$ 96,110	\$ 55,482	\$ 36,988	\$ 188,580
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,063,620	\$ 3,718,325	\$ 2,122,341	\$ 11,904,286
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	23,100	LF	2.09	3.42	1.46	\$ 48,302	\$ 78,893	\$ 33,811	\$ 161,007
7.2	Caweld, DSA, 4/0 , T, CROSS	612	EA	165.00	75.00		\$ 100,980	\$ 45,900	\$ -	\$ 146,880
7.3	Ground Rod, 3/4" x 15'	561	EA	135.00	67.50	7.50	\$ 75,735	\$ 37,868	\$ 4,208	\$ 117,810
TOTAL - GROUND GRID							\$ 225,017	\$ 162,661	\$ 38,019	\$ 425,697
8. CONTROL ENCLOSURE										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	0	EA	2,211,495.05	1,548,046.53	663,448.51	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.8	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.14	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.15	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.17	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 293,437	\$ 234,750	\$ 58,687	\$ 586,875
13- Station 30a New Northport HVDC 1200MW Converter Station							\$ 188,073,821	\$ 65,401,347	\$ 62,948,925	\$ 316,424,093
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		292,259.53	125,254.08	\$ -	\$ 292,260	\$ 125,254	\$ 417,514
Project Management, Material Handling & Amenities										
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		656,963.72		\$ -	\$ 656,964	\$ -	\$ 656,964
9.4	Utility PM and Project Oversight	1	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.5	Site Accommodation, Facilities, Storage	1	LS	164,240.93			\$ 164,241	\$ -	\$ -	\$ 164,241
Engineering										
9.6	Design Engineering	1.00	LS		1,313,927.44		\$ -	\$ 1,313,927	\$ -	\$ 1,313,927
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		114,968.65		\$ -	\$ 114,969	\$ -	\$ 114,969
Testing & Commissioning										
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		615,903.49		\$ -	\$ 615,903	\$ -	\$ 615,903
Permitting and Additional Costs										
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		164,240.93		\$ -	\$ 164,241	\$ -	\$ 164,241
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		49,272.28		\$ -	\$ 49,272	\$ -	\$ 49,272
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	1,271,884.00	\$ -	\$ -	\$ 1,271,884	\$ 1,271,884
9.17	Legal Fees (Real estate)	1.00	LS		-	38,156.52	\$ -	\$ -	\$ 38,157	\$ 38,157
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 8,960,000	\$ -	\$ -	\$ 8,960,000	\$ 8,960,000
9.20	Sales Tax on Materials	8.80%	LS	188,073,820.71			\$ 16,550,496	\$ -	\$ -	\$ 16,550,496
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		316,424.09		\$ -	\$ 316,424	\$ -	\$ 316,424
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,714,737	\$ 3,872,639	\$ 10,404,395	\$ 30,991,771

NEXtera Energy- TO44 Enhanced 2

14 - Northport 138kV GIS Substation

Total: \$ 40,126,906

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
14 - Northport 138kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 423,784	\$ 299,491	\$ 171,133	\$ 894,409
2. SUBSTATION FOUNDATIONS	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 2,658,505	\$ 1,489,519	\$ 795,356	\$ 4,943,380
7. GROUND GRID	\$ 31,301	\$ 22,409	\$ 5,136	\$ 58,846
8. CONTROL ENCLOSURE	\$ 1,925,705	\$ 1,502,309	\$ 534,896	\$ 3,962,909
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,212,779	\$ 2,378,384	\$ 1,029,353	\$ 4,620,516
Turnkey cost (HVDC, GIS)	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
Non-Turnkey cost	\$ 6,596,977	\$ 6,086,288	\$ 2,782,234	\$ 15,465,499
SUBTOTAL (Costs):	\$ 13,761,977	\$ 10,385,288	\$ 5,648,234	\$ 29,795,499
CONTRACTOR MARK-UP (OH&P)	\$ 1,617,356	\$ 1,353,472	\$ 672,762	\$ 3,643,590
SUBTOTAL:	\$ 15,379,333	\$ 11,738,760	\$ 6,320,996	\$ 33,439,088
CONTINGENCY ON ENTIRE PROJECT	\$ 3,075,867	\$ 2,347,752	\$ 1,264,199	\$ 6,687,818
TOTAL:	\$ 18,455,200	\$ 14,086,511	\$ 7,585,195	\$ 40,126,906

Description of Work: Construct a new Northport 138kV GIS substation adjacent to the existing Northport 138kV substation. Tie the existing Pilgrim-Northport 138kV lines, the new 138kV lines to Northport HVDC station, and the existing Northport 138kV substation into the 138kV breaker-and-a-half bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 - Northport 138kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 20,549	\$ 13,699	\$ 34,249
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	1,105	SY	4.85	7.20	4.80	\$ 5,361	\$ 7,958	\$ 5,306	\$ 18,625
1.4	Strip and Dispose Top Soil	1,579	CY		24.50	10.50	\$ -	\$ 38,678	\$ 16,576	\$ 55,255
1.5	Site Grading- Excavation for Substation Pad	4,736	CY		9.00	6.00	\$ -	\$ 42,625	\$ 28,417	\$ 71,042
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	2,558	CY		21.00	9.00	\$ -	\$ 53,707.50	\$ 23,017.50	\$ 76,725.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,836	CY		2.40	1.60	\$ -	\$ 9,207	\$ 6,138	\$ 15,345
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,558	CY	25.00	2.40	1.60	\$ 63,938	\$ 6,138	\$ 4,092	\$ 74,168
1.9	Install substation 8" pad base	2,368	SY	11.00	6.00	4.00	\$ 26,049	\$ 14,208	\$ 9,472	\$ 49,729
1.10	Site Surfacing - Aggregate 6" Thick	3,552	SY	16.50	4.50	3.00	\$ 58,609	\$ 15,984	\$ 10,656	\$ 85,250
1.11	7' Station Fence w/ Barbed Wire & Grounding	642	LF	13.85	13.85	6.92	\$ 8,890	\$ 8,890	\$ 4,445	\$ 22,226
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	223,488.00	57,600.00	38,052.00	\$ 223,488	\$ 57,600	\$ 38,052	\$ 319,140
1.15	Seeding	5,600	SF	1.50	1.50	1.00	\$ 8,400	\$ 8,400	\$ 5,600	\$ 22,400
1.16	Erosion Control-Silt fence install & remove	1,059	LF	2.41	3.16	0.72	\$ 2,553	\$ 3,347	\$ 763	\$ 6,663
1.17	Temporary fencing	706	LF	7.50	5.25	2.25	\$ 5,297	\$ 3,708	\$ 1,589	\$ 10,593
1.18	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 423,784	\$ 299,491	\$ 171,133	\$ 894,409
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, GIS Enclosure-BLDG	490	CY	703.89	804.44	502.78	\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
2.25	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 344,904	\$ 394,176	\$ 246,360	\$ 985,439
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	36,300.00	36,300.00	18,150.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	0	EA		339,150.00	145,350.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Phase Angle Regulator	0	EA	16,120,693.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	0	EA		715,400.00	306,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138Kv, GIS indoor	15	EA	477,666.67	286,600.00	191,066.67	\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
4.19	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,165,000	\$ 4,299,000	\$ 2,866,000	\$ 14,330,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables		LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	2,449	LF	266.73	202.15	100.00	\$ 653,224	\$ 495,057	\$ 244,912	\$ 1,393,193
6.9	138kV UG- Cable	7,714	LF	145.00	87.00	58.00	\$ 1,118,581	\$ 671,148	\$ 447,432	\$ 2,237,162
6.10	138kV UG- Termination	30	EA	27,805.00	9,846.48	2,813.28	\$ 834,150	\$ 295,394	\$ 84,398	\$ 1,213,943
6.13	Fiber Optic Cable	2,571	LF	7.40	3.33	2.22	\$ 19,021	\$ 8,564	\$ 5,710	\$ 33,295
6.14	Ground Continuity Conductor	2,571	LF	13.04	7.53	5.02	\$ 33,529	\$ 19,355	\$ 12,904	\$ 65,788
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,658,505	\$ 1,489,519	\$ 795,356	\$ 4,943,380
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,140	LF	2.09	3.42	1.46	\$ 6,566	\$ 10,724	\$ 4,596	\$ 21,886
7.2	Caweld, DSA, 4/0 , T, CROSS	91	EA	165.00	75.00		\$ 15,015	\$ 6,825	\$ -	\$ 21,840
7.3	Ground Rod, 3/4" x 15'	72	EA	135.00	67.50	7.50	\$ 9,720	\$ 4,860	\$ 540	\$ 15,120
TOTAL - GROUND GRID							\$ 31,301	\$ 22,409	\$ 5,136	\$ 58,846
8. CONTROL ENCLOSURE										
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	1	EA	878,048.71	614,634.10	263,414.61	\$ 878,049	\$ 614,634	\$ 263,415	\$ 1,756,097
8.3	Primary Line Relays (87L): SEL-411L	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.4	Backup Line Relays (87L): GE L90	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.5	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	125VDC Battery System	1	LS	25,000.00	22,750.00	9,750.00	\$ 25,000	\$ 22,750	\$ 9,750	\$ 57,500
8.15	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,925,705	\$ 1,502,309	\$ 534,896	\$ 3,962,909
14 - Northport 138kV GIS Substation							\$ 12,549,198	\$ 8,006,904	\$ 4,618,880	\$ 25,174,983

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		191,127.46	81,911.77	\$ -	\$ 191,127	\$ 81,912	\$ 273,039
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		433,799.31		\$ -	\$ 433,799	\$ -	\$ 433,799
9.4	Utility PM and Project Oversight	1	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.5	Site Accommodation, Facilities, Storage	1	LS	108,449.83			\$ 108,450	\$ -	\$ -	\$ 108,450
	Engineering									
9.6	Design Engineering	1.00	LS		867,598.62		\$ -	\$ 867,599	\$ -	\$ 867,599
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		75,914.88		\$ -	\$ 75,915	\$ -	\$ 75,915
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		406,686.85		\$ -	\$ 406,687	\$ -	\$ 406,687
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		108,449.83		\$ -	\$ 108,450	\$ -	\$ 108,450
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		32,534.95		\$ -	\$ 32,535	\$ -	\$ 32,535
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-	134,312.00	\$ -	\$ -	\$ 134,312	\$ 134,312
9.17	Legal Fees (Real estate)	1.00	LS		-	4,029.36	\$ -	\$ -	\$ 4,029	\$ 4,029
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 800,000	\$ -	\$ -	\$ 800,000	\$ 800,000
9.20	Sales Tax on Materials	8.80%	LS	12,549,198.06			\$ 1,104,329	\$ -	\$ -	\$ 1,104,329
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		25,174.98		\$ -	\$ 25,175	\$ -	\$ 25,175
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,212,779	\$ 2,378,384	\$ 1,029,353	\$ 4,620,516

NEXTera Energy- TO44 Enhanced 2

15.Pilgrim 138kV Substation Upgrades

Total: \$ 3,731,393

NEXTera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
15.Pilgrim 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 112,392	\$ 133,871	\$ 75,747	\$ 322,010
2. SUBSTATION FOUNDATIONS	\$ 61,984	\$ 70,839	\$ 44,274	\$ 177,097
3. SUBSTATION STRUCTURES	\$ 78,293	\$ 94,861	\$ 58,896	\$ 232,051
4. MAJOR EQUIPMENT	\$ 468,798	\$ 116,038	\$ 51,792	\$ 636,628
5. LOW VOLTAGE & CONTROL CABLE	\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
6. CONDUIT & CABLE TRENCH	\$ 86,695	\$ 32,700	\$ 13,035	\$ 132,430
7. GROUND GRID	\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 114,942	\$ 424,477	\$ 91,527	\$ 630,946
SUBTOTAL (Costs):	\$ 1,193,346	\$ 1,060,359	\$ 381,460	\$ 2,635,164
CONTRACTOR MARK-UP (OH&P)	\$ 214,802	\$ 190,865	\$ 68,663	\$ 474,330
SUBTOTAL:	\$ 1,408,148	\$ 1,251,223	\$ 450,123	\$ 3,109,494
CONTINGENCY ON ENTIRE PROJECT	\$ 281,630	\$ 250,245	\$ 90,025	\$ 621,899
TOTAL:	\$ 1,689,777	\$ 1,501,468	\$ 540,148	\$ 3,731,393

Description of Work: Add 2 terminals to Pilgrim 138kV substation to accommodate the new transmission lines

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 5,400	\$ 3,600	\$ 9,000
1.2	Demolition	1	LS		12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	711	SY	4.85	7.20	4.80	\$ 3,449	\$ 5,120	\$ 3,413	\$ 11,982
1.4	Strip and Dispose Top Soil	807	CY		24.50	10.50	\$ -	\$ 19,763	\$ 8,470	\$ 28,233
1.5	Site Grading- Excavation for Substation Pad	2,420	CY		9.00	6.00	\$ -	\$ 21,780	\$ 14,520	\$ 36,300
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,307	CY		21.00	9.00	\$ -	\$ 27,442.80	\$ 11,761.20	\$ 39,204.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,960	CY		2.40	1.60	\$ -	\$ 4,704	\$ 3,136	\$ 7,841
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,307	CY	25.00	2.40	1.60	\$ 32,670	\$ 3,136	\$ 2,091	\$ 37,897
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	2,420	SY	11.00	6.00	4.00	\$ 26,620	\$ 14,520	\$ 9,680	\$ 50,820
1.11	Site Surfacing - Aggregate 6" Thick	2,420	SY	16.50	4.50	3.00	\$ 39,930	\$ 10,890	\$ 7,260	\$ 58,080
1.12	7' Station Fence w/ Barbed Wire & Grounding	325	LF	13.85	13.85	6.92	\$ 4,501	\$ 4,501	\$ 2,250	\$ 11,252
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	109,761.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	650	LF	2.41	3.16	0.72	\$ 1,567	\$ 2,054	\$ 468	\$ 4,089
1.18	Temporary fencing	488	LF	7.50	5.25	2.25	\$ 3,656	\$ 2,559	\$ 1,097	\$ 7,313
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 112,392	\$ 133,871	\$ 75,747	\$ 322,010
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	9	CY	703.89	804.44	502.78	\$ 6,265	\$ 7,160	\$ 4,475	\$ 17,899
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 61,984	\$ 70,839	\$ 44,274	\$ 177,097
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	4	EA	4,896.84	4,896.84	2,448.42	\$ 19,587	\$ 19,587	\$ 9,794	\$ 48,968
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.18	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'		EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	216	LF	25.00	184.94	123.29	\$ 5,400	\$ 39,947	\$ 26,631	\$ 71,978
3.22	AL. Bus fittings	1	LS	6,480.00	6,480.00	3,240.00	\$ 6,480	\$ 6,480	\$ 3,240	\$ 16,200
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 78,293	\$ 94,861	\$ 58,896	\$ 232,051
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA				\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker,	2	EA	112,000.00	13,559.00	5,811.00	\$ 224,000	\$ 27,118	\$ 11,622	\$ 262,740
4.24	138kV, Disconnect Switch	4	EA	37,700.00	11,875.50	5,089.50	\$ 150,800	\$ 47,502	\$ 20,358	\$ 218,660
4.25	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.26	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	6	EA	4,066.40	1,443.00	962.00	\$ 24,398	\$ 8,658	\$ 5,772	\$ 38,828
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 468,798	\$ 116,038	\$ 51,792	\$ 636,628
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	10,200	LF	5.30	1.43	0.29	\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7							\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable	0	LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination	0	EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 86,695	\$ 32,700	\$ 13,035	\$ 132,430
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	3.42	1.46	\$ 836	\$ 1,366	\$ 585	\$ 2,788
7.2	Caweld, DSA, 4/0 , T, CROSS	10	EA	165.00	75.00		\$ 1,650	\$ 750	\$ -	\$ 2,400
7.3	Ground Rod, 3/4" x 15'	3	EA	135.00	67.50	7.50	\$ 439	\$ 219	\$ 24	\$ 683
TOTAL - GROUND GRID							\$ 2,925	\$ 2,335	\$ 610	\$ 5,871
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
10.Shore Road 138kV Substation Upgrades							\$ 1,078,404	\$ 635,881	\$ 289,933	\$ 2,004,218
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		32,403.50	13,887.22	\$ -	\$ 32,404	\$ 13,887	\$ 46,291
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		20,042.18		\$ -	\$ 20,042	\$ -	\$ 20,042
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		80,168.73		\$ -	\$ 80,169	\$ -	\$ 80,169
9.4	Utility PM and Project Oversight	1	LS		20,042.18		\$ -	\$ 20,042	\$ -	\$ 20,042
9.5	Site Accommodation, Facilities, Storage	1	LS	20,042.18			\$ 20,042	\$ -	\$ -	\$ 20,042
	Engineering									
9.6	Design Engineering	1.00	LS		160,337.46		\$ -	\$ 160,337	\$ -	\$ 160,337
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		14,029.53		\$ -	\$ 2,806	\$ -	\$ 2,806
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		75,158.19		\$ -	\$ 75,158	\$ -	\$ 75,158
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		20,042.18		\$ -	\$ 20,042	\$ -	\$ 20,042
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		6,012.65		\$ -	\$ 6,013	\$ -	\$ 6,013
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 74,000	\$ -	\$ -	\$ 74,000	\$ 74,000
9.20	Sales Tax on Materials	8.80%	LS	1,078,403.91			\$ 94,900	\$ -	\$ -	\$ 94,900
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,004.22		\$ -	\$ 2,004	\$ -	\$ 2,004
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 114,942	\$ 424,477	\$ 91,527	\$ 630,946

NEXtera Energy- TO44 Enhanced 2

16. - Comp 231 & 101 Buchanan 345kV GIS & HVDC Substation Upgrade

Total: \$ 1,040,319,868

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
16. - Comp 231 & 101 Buchanan 345kV GIS & HVDC Substation Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,533,876	\$ 2,243,681	\$ 1,283,940	\$ 6,061,497
2. SUBSTATION FOUNDATIONS	\$ 2,589,656	\$ 2,600,163	\$ 1,600,162	\$ 6,789,981
3. SUBSTATION STRUCTURES	\$ 447,704	\$ 643,612	\$ 419,265	\$ 1,510,581
4. MAJOR EQUIPTMENT	\$ 366,888,389	\$ 204,778,440	\$ 136,487,960	\$ 708,154,789
5. LOW VOLTAGE & CONTROL CABLE	\$ 55,624	\$ 15,041	\$ 3,008	\$ 73,673
6. CONDUIT & CABLE TRENCH	\$ 2,031,442	\$ 1,284,659	\$ 723,654	\$ 4,039,756
7. GROUND GRID	\$ 695,582	\$ 503,538	\$ 118,088	\$ 1,317,208
8. CONTROL ENCLOSURE	\$ 3,595,060	\$ 2,783,654	\$ 1,060,405	\$ 7,439,119
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 33,923,651	\$ 12,963,812	\$ 21,241,206	\$ 68,128,670
Turnkey cost (HVDC, GIS)	\$ 338,395,000	\$ 203,037,000	\$ 135,358,000	\$ 676,790,000
Non-Turnkey cost	\$ 74,365,984	\$ 24,779,601	\$ 27,579,689	\$ 126,725,274
SUBTOTAL (Costs):	\$ 412,760,984	\$ 227,816,601	\$ 162,937,689	\$ 803,515,274
CONTRACTOR MARK-UP (OH&P)	\$ 33,689,577	\$ 16,642,548	\$ 13,085,824	\$ 63,417,949
SUBTOTAL:	\$ 446,450,561	\$ 244,459,149	\$ 176,023,513	\$ 866,933,223
CONTINGENCY ON ENTIRE PROJECT	\$ 89,290,112	\$ 48,891,830	\$ 35,204,703	\$ 173,386,645
TOTAL:	\$ 535,740,673	\$ 293,350,979	\$ 211,228,215	\$ 1,040,319,868

Description of Work: Construct two (2) new Buchanan HVDC 1200 MW converter stations, with a transition from 320 kV DC to 345 kV AC and ties into the existing Buchanan 345 kV station and the new NEET Offshore Wind Platform HVDC cables.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16. - Comp 231 & 101 Buchanan 345kV GIS & HVDC Substation Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	8.5	ACRE	-	21,000.00	14,000.00	\$ -	\$ 178,500	\$ 119,000	\$ 297,500
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,864	SY	4.85	7.20	4.80	\$ 18,743	\$ 27,824	\$ 18,549	\$ 65,116
1.4	Strip and Dispose Top Soil	13,713	CY		24.50	10.50	\$ -	\$ 335,977	\$ 143,990	\$ 479,967
1.5	Site Grading- Excavation for Substation Pad	41,140	CY		9.00	6.00	\$ -	\$ 370,260	\$ 246,840	\$ 617,100
1.6	Site Grading- Excavation for Substation Pad-Hauling and disposal	22,216	CY		21.00	9.00	\$ -	\$ 466,527.60	\$ 199,940.40	\$ 666,468.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	33,323	CY		2.40	1.60	\$ -	\$ 79,976	\$ 53,317	\$ 133,294
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	22,216	CY	25.00	2.40	1.60	\$ 555,390	\$ 53,317	\$ 35,545	\$ 644,252
1.9	Install substation 8" pad base	20,570	SY	11.00	6.00	4.00	\$ 226,270	\$ 123,420	\$ 82,280	\$ 431,970
1.10	Site Surfacing - Aggregate 6" Thick	30,855	SY	16.50	4.50	3.00	\$ 509,108	\$ 138,848	\$ 92,565	\$ 740,520
1.11	7' Station Fence w/ Barbed Wire & Grounding	3,510	LF	13.85	13.85	6.92	\$ 48,606	\$ 48,606	\$ 24,303	\$ 121,516
1.12	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.13	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.14	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	1,016,870.40	262,080.00	173,136.60	\$ 1,016,870	\$ 262,080	\$ 173,137	\$ 1,452,087
1.15	Seeding	27,216	SF	1.50	1.50	1.00	\$ 40,824	\$ 40,824	\$ 27,216	\$ 108,864
1.16	Erosion Control-Silt fence install & remove	5,792	LF	2.41	3.16	0.72	\$ 13,958	\$ 18,301	\$ 4,170	\$ 36,429
1.17	Temporary fencing	3,861	LF	7.50	5.25	2.25	\$ 28,958	\$ 20,270	\$ 8,687	\$ 57,915
1.18	Substation entrance with asphalt	2,500	SY	19.50	26.00	19.50	\$ 48,750	\$ 65,000	\$ 48,750	\$ 162,500
1.19	Concrete curb	200	LF	26.00	27.30	11.70	\$ 5,200	\$ 5,460	\$ 2,340	\$ 13,000
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,533,876	\$ 2,243,681	\$ 1,283,940	\$ 6,061,497
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	111	CY	703.89	804.44	502.78	\$ 77,850	\$ 88,971	\$ 55,607	\$ 222,428
2.6	345kV, Bus support-1 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.7	345kV, GIS air terminal	20	CY	703.89	804.44	502.78	\$ 13,937	\$ 15,928	\$ 9,955	\$ 39,820
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.12	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.15	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-75MVAR	100	CY	703.89	804.44	502.78	\$ 70,389	\$ 80,444	\$ 50,278	\$ 201,110
2.18	345kV, Phase Angle Regulator with oil containment	706	CY	703.89	804.44	502.78	\$ 496,943	\$ 567,935	\$ 354,959	\$ 1,419,837
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, GIS Enclosure-BLDG	1,140	CY	703.89	804.44	502.78	\$ 802,429	\$ 917,062	\$ 573,164	\$ 2,292,654
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Builiding		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Dead-Tank Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
2.41	Firewall Foundation	515	CY	703.89	804.44	502.78	\$ 362,360	\$ 414,126	\$ 258,829	\$ 1,035,314
2.42	Precast Firewall for transformer, PARs, reactors	7,800	SF	25.00	15.00	10.00	\$ 195,000	\$ 117,000	\$ 78,000	\$ 390,000
TOTAL - 345KV FOUNDATION							\$ 2,589,656	\$ 2,600,163	\$ 1,600,162	\$ 6,789,981
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, H Frame -SHARED COLUMN (3 BAY)	0	EA	64,350.00	38,610.00	25,740.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.5	345kV, Bus support-3 Ph, low	12	EA	8,346.00	5,758.74	3,839.16	\$ 100,152	\$ 69,105	\$ 46,070	\$ 215,327
3.6	345kV, Bus support-1 Ph	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.11	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.15	345kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA							
3.19	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, H Frame H Frame -SHARED COLUMN (3 BAY)	0	EA	45,045.00	27,027.00	18,018.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80	1,962	LF	25.00	184.94	123.29	\$ 49,050	\$ 362,848	\$ 241,899	\$ 653,797
3.23	AL. Bus fittings	1	LS	58,860.00	58,860.00	29,430.00	\$ 58,860	\$ 58,860	\$ 29,430	\$ 147,150

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.25	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 447,704	\$ 643,612	\$ 419,265	\$ 1,510,581
4. MAJOR EQUIPMENT										
4.1	345Kv, GIS indoor	9	EA	849,444.44	509,666.67	339,777.78	\$ 7,645,000	\$ 4,587,000	\$ 3,058,000	\$ 15,290,000
4.2	345kV, GIS air terminal	3	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.6	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.7	345/138KV, Single-Phase 720/900/1200MVA Power Transformer with oil containmenet	0	EA	9,980,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	Transport & Testing- Transformer	0	EA		1,170,400.00	501,600.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-75MVAR	1	EA	2,277,924.50	3,520.00	880.00	\$ 2,277,925	\$ 3,520	\$ 880	\$ 2,282,325
4.11	Transport & Testing- Shunt Reactor	1	EA		261,400.00	170,600.00	\$ -	\$ 261,400	\$ 170,600	\$ 432,000
4.12	345kV, Phase Angle Regulator	2	EA	12,882,000.00	3,520.00	880.00	\$ 25,764,000	\$ 7,040	\$ 1,760	\$ 25,772,800
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	2	EA		615,400.00	406,600.00	\$ -	\$ 1,230,800	\$ 813,200	\$ 2,044,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA	1,341,857.17	805,114.30	536,742.87	\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA		5,460.00	2,340.00	\$ -	\$ 32,760	\$ 14,040	\$ 46,800
4.17	345kV, Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator	0	EA	11,902,178.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		701,400.00	300,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Dead-Tank Breaker	0	EA	183,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.25	HVDC 1200MW Monopoles	2.0	EA	165,375,000.00	99,225,000.00	66,150,000.00	\$ 330,750,000.00	\$ 198,450,000.00	\$ 132,300,000.00	\$ 661,500,000
4.26	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.27	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.28	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.29	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.30	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.31	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.32	HVDC VSC Converter Station -Storage building									
4.32	345kV Gas-Insulated Bus Conductor (Ourdoor)		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.33	345kV Gas-Insulated Bus Conductor-elbow (Ourdoor)		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.28	Transport & Testing- GIL		LS		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 366,888,389	\$ 204,778,440	\$ 136,487,960	\$ 708,154,789
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	10,500	LF	5.30	1.43	0.29	\$ 55,624	\$ 15,041	\$ 3,008	\$ 73,673
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 55,624	\$ 15,041	\$ 3,008	\$ 73,673
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	22,500	LF	11.15	10.80	5.40	\$ 250,875	\$ 243,000	\$ 121,500	\$ 615,375
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV-OH	1,000	LF	375.00	225.00	150.00	\$ 375,000	\$ 225,000	\$ 150,000	\$ 750,000
6.8	345kV UG- Conduit	1,360	LF	266.73	202.15	100.00	\$ 362,754	\$ 274,919	\$ 136,007	\$ 773,680
6.9	345kV UG- Cable	4,080	LF	167.00	100.20	66.80	\$ 681,360	\$ 408,816	\$ 272,544	\$ 1,362,720
6.10	345kV UG- Termination	12	EA	27,805.00	9,846.48	2,813.28	\$ 333,660	\$ 118,158	\$ 33,759	\$ 485,577
6.11	Fiber Optic Cable	1,360	LF	7.40	3.33	2.22	\$ 10,060	\$ 4,530	\$ 3,020	\$ 17,609
6.12	Ground Continuity Conductor	1,360	LF	13.04	7.53	5.02	\$ 17,733	\$ 10,237	\$ 6,824	\$ 34,794
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,031,442	\$ 1,284,659	\$ 723,654	\$ 4,039,756
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	71,608	LF	2.09	3.42	1.46	\$ 149,732	\$ 244,563	\$ 104,813	\$ 499,108
7.2	Caweld, DSA, 4/0 , T, CROSS	1,860	EA	165.00	75.00		\$ 306,900	\$ 139,500	\$ -	\$ 446,400
7.3	Ground Rod, 3/4" x 15'	1,770	EA	135.00	67.50	7.50	\$ 238,950	\$ 119,475	\$ 13,275	\$ 371,700
TOTAL - GROUND GRID							\$ 695,582	\$ 503,538	\$ 118,088	\$ 1,317,208
8. CONTROL ENCLOSURE										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.1	345/138 Kv, Control Enclosure-BLDG with generator pad	0	EA	964,411.37	675,087.96	289,323.41	\$ -	\$ -	\$ -	\$ -
8.2	345kV, GIS Enclosure-BLDG	1	EA	2,226,935.13	1,558,854.59	668,080.54	\$ 2,226,935	\$ 1,558,855	\$ 668,081	\$ 4,453,870
8.3	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Primary Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.6	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunci	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.17	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.18	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.19	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.20	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.21	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.22	Control house AC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.23	Control House DC Panel	2	EA	65,000.00	91,000.00	39,000.00	\$ 130,000	\$ 182,000	\$ 78,000	\$ 390,000
8.24	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 3,595,060	\$ 2,783,654	\$ 1,060,405	\$ 7,439,119
16. - Comp 231 & 101 Buchanan 345kV GIS & HVDC Substation Upgrade							\$ 378,837,333	\$ 214,852,789	\$ 141,696,483	\$ 735,386,604
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		635,399.50	272,314.07	\$ -	\$ 635,399	\$ 272,314	\$ 907,714
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		585,966.04		\$ -	\$ 585,966	\$ -	\$ 585,966
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,343,864.16		\$ -	\$ 2,343,864	\$ -	\$ 2,343,864
9.4	Utility PM and Project Oversight	1	LS		585,966.04		\$ -	\$ 585,966	\$ -	\$ 585,966
9.5	Site Accommodation, Facilities, Storage	1	LS	585,966.04			\$ 585,966	\$ -	\$ -	\$ 585,966
	Engineering									
9.6	Design Engineering	1.00	LS		4,687,728.32		\$ -	\$ 4,687,728	\$ -	\$ 4,687,728
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		410,176.23		\$ -	\$ 410,176	\$ -	\$ 410,176
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,197,372.65		\$ -	\$ 2,197,373	\$ -	\$ 2,197,373
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		585,966.04		\$ -	\$ 585,966	\$ -	\$ 585,966
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		175,789.81		\$ -	\$ 175,790	\$ -	\$ 175,790
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			155,138.00	\$ -	\$ -	\$ 155,138	\$ 155,138
9.17	Legal Fees (Real estate)	1.00	LS		-	4,654.14	\$ -	\$ -	\$ 4,654	\$ 4,654
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 20,800,000	\$ -	\$ -	\$ 20,800,000	\$ 20,800,000
9.20	Sales Tax on Materials	8.80%	LS	378,837,332.70			\$ 33,337,685	\$ -	\$ -	\$ 33,337,685
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		735,386.60		\$ -	\$ 735,387	\$ -	\$ 735,387
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 33,923,651	\$ 12,963,812	\$ 21,241,206	\$ 68,128,670

17. Farragut 345kV Substation Expansion

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
17. Farragut 345kV Substation Expansion				
1. MARINE CONSTRUCITON CIVIL	\$ 15,364,664	\$ 17,326,648	\$ 14,501,686	\$ 47,192,999
2. SUBSTATION FOUNDATIONS	\$ 1,162,370	\$ 1,238,851	\$ 778,407	\$ 3,179,628
3. SUBSTATION STRUCTURES	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
4. MAJOR EQUIPMENT	\$ 11,092,004	\$ 3,745,840	\$ 2,486,960	\$ 17,324,804
5. LOW VOLTAGE & CONTROL CABLE	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH	\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID	\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE	\$ 2,437,317	\$ 1,844,360	\$ 711,958	\$ 4,993,635
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,315,834	\$ 14,052,958	\$ 3,272,134	\$ 20,640,926
Turnkey cost (HVDC, GIS)	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
Non-Turnkey cost	\$ 28,693,435	\$ 35,303,634	\$ 19,760,405	\$ 83,757,473
SUBTOTAL (Costs):	\$ 33,823,435	\$ 38,381,634	\$ 21,812,405	\$ 94,017,473
CONTRACTOR MARK-UP (OH&P)	\$ 5,472,618	\$ 6,539,334	\$ 3,679,993	\$ 15,691,945
SUBTOTAL:	\$ 39,296,053	\$ 44,920,968	\$ 25,492,397	\$ 109,709,418
CONTINGENCY ON ENTIRE PROJECT	\$ 7,859,211	\$ 8,984,194	\$ 5,098,479	\$ 21,941,884
TOTAL:	\$ 47,155,264	\$ 53,905,161	\$ 30,590,877	\$ 131,651,302

17.Farragut 345kV Sub

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	221	CY	703.89	804.44	502.78	\$ 155,559	\$ 177,781	\$ 111,113	\$ 444,453
2.15	345kV, Shunt Reactor with oil containment-275MVAR	300	CY	703.89	804.44	502.78	\$ 211,166	\$ 241,332	\$ 150,833	\$ 603,330
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-80MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker, AIS breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	896	CY	703.89	804.44	502.78	\$ 630,646	\$ 720,738	\$ 450,461	\$ 1,801,845
2.32	Precast Firewall for transformer, PARs, reactors	6,600	SF	25.00	15.00	10.00	\$ 165,000	\$ 99,000	\$ 66,000	\$ 330,000
2.33	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,162,370	\$ 1,238,851	\$ 778,407	\$ 3,179,628
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch-3 Ph	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28		\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50		\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.9	345kV, Shunt Reactor with oil containment-275MVAR	1	EA	3,332,487.50	3,520.00	880.00	\$ 3,332,488	\$ 3,520	\$ 880	\$ 3,336,888
4.10	Transport & Testing- Shunt Reactor	2	EA		330,400.00	216,600.00	\$ -	\$ 660,800	\$ 433,200	\$ 1,094,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Gas Insulated Switchgear, BAAH Arrangement	6	BKR	855,000.00	513,000.00	342,000.00	\$ 5,130,000	\$ 3,078,000	\$ 2,052,000	\$ 10,260,000
4.13	345kV, Circuit Breaker	0	EA		57,239.00	24,531.00		\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA					\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA					\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	0	EA		5,460.00	2,340.00		\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Shunt Reactor with oil containment-80MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, AIS breaker	0	EA		13,559.00	5,811.00		\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50		\$ -	\$ -	\$ -
4.25	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75		\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.28	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 11,092,004	\$ 3,745,840	\$ 2,486,960	\$ 17,324,804
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	1,500	LF	5.30	1.43	0.29	\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 7,946	\$ 2,149	\$ 430	\$ 10,525
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	300	LF	11.15	10.80	5.40	\$ 3,345	\$ 3,240	\$ 1,620	\$ 8,205
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	575	LF	266.50	53.04	13.26	\$ 153,238	\$ 30,498	\$ 7,625	\$ 191,360
6.7										
6.8	138kV UG- Conduit	0	LF	41.00	30.00	16.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination	0	EA	9,360.00	11,700.00		\$ -	\$ -	\$ -	\$ -
6.11	345kV UG- Conduit		LF	52.00	47.00	29.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.14										
6.15							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 156,583	\$ 33,738	\$ 9,245	\$ 199,565
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,000	LF	2.09	3.42	1.46	\$ 10,455	\$ 17,077	\$ 7,319	\$ 34,850
7.2	Caweld, DSA, 4/0 , T, CROSS	143	EA	165.00	75.00		\$ 23,595	\$ 10,725	\$ -	\$ 34,320
7.3	Ground Rod, 3/4" x 15'	120	EA	135.00	67.50	7.50	\$ 16,200	\$ 8,100	\$ 900	\$ 25,200
TOTAL - GROUND GRID							\$ 50,250	\$ 35,902	\$ 8,219	\$ 94,370
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	1	EA	1,577,942.61	1,104,559.83	473,382.78	\$ 1,577,943	\$ 1,104,560	\$ 473,383	\$ 3,155,885
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Anr	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.15	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.16	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.17	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.18	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.19	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,437,317	\$ 1,844,360	\$ 711,958	\$ 4,993,635
17. Farragut 345kV Substation Expansion							\$ 30,507,600	\$ 24,328,676	\$ 18,540,270	\$ 73,376,547
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,500,413.12	643,034.19	\$ -	\$ 1,500,413	\$ 643,034	\$ 2,143,447
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		631,165.47		\$ -	\$ 631,165	\$ -	\$ 631,165
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		2,524,661.87		\$ -	\$ 2,524,662	\$ -	\$ 2,524,662
9.4	Utility PM and Project Oversight	1	LS		631,165.47		\$ -	\$ 631,165	\$ -	\$ 631,165
9.5	Site Accommodation, Facilities, Storage	1	LS	631,165.47			\$ 631,165	\$ -	\$ -	\$ 631,165
	Engineering									
9.6	Design Engineering	1.00	LS		5,049,323.74		\$ -	\$ 5,049,324	\$ -	\$ 5,049,324
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		441,815.83		\$ -	\$ 441,816	\$ -	\$ 441,816
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,366,870.50		\$ -	\$ 2,366,871	\$ -	\$ 2,366,871
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		631,165.47		\$ -	\$ 631,165	\$ -	\$ 631,165
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		189,349.64		\$ -	\$ 189,350	\$ -	\$ 189,350
9.15	Laydown Lease	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,620,000	\$ -	\$ -	\$ 2,620,000	\$ 2,620,000
9.20	Sales Tax on Materials	8.80%	LS	30,507,600.43			\$ 2,684,669	\$ -	\$ -	\$ 2,684,669
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		73,376.55		\$ -	\$ 73,377	\$ -	\$ 73,377
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,315,834	\$ 14,052,958	\$ 3,272,134	\$ 20,640,926

NEXtera Energy- TO44 Enhanced 2

18- Corona 138kV Substation Upgrades

Total: \$ 22,156,789

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
18- Corona 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 136,272	\$ 155,740	\$ 97,337	\$ 389,349
3. SUBSTATION STRUCTURES	\$ 168,309	\$ 85,147	\$ 44,718	\$ 298,174
4. MAJOR EQUIPMENT	\$ 9,798,059	\$ 3,520	\$ 880	\$ 9,802,459
5. LOW VOLTAGE & CONTROL CABLE	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH	\$ 637,934	\$ 320,757	\$ 160,256	\$ 1,118,947
7. GROUND GRID	\$ 6,070	\$ 4,188	\$ 895	\$ 11,154
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,072,728	\$ 2,306,686	\$ 456,279	\$ 3,835,693
SUBTOTAL (Costs):	\$ 11,920,577	\$ 2,948,586	\$ 778,287	\$ 15,647,450
CONTRACTOR MARK-UP (OH&P)	\$ 2,145,704	\$ 530,745	\$ 140,092	\$ 2,816,541
SUBTOTAL:	\$ 14,066,281	\$ 3,479,331	\$ 918,379	\$ 18,463,991
CONTINGENCY ON ENTIRE PROJECT	\$ 2,813,256	\$ 695,866	\$ 183,676	\$ 3,692,798
TOTAL:	\$ 16,879,538	\$ 4,175,197	\$ 1,102,055	\$ 22,156,789

Description of Work: Install a new PAR at the existng Corona 138KV substation connected to the bus tie terminal

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS		24,000.00	16,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	75,000.00	45,000.00	30,000.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 136,272	\$ 155,740	\$ 97,337	\$ 389,349
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA	4,896.84	4,896.84	2,448.42	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 168,309	\$ 85,147	\$ 44,718	\$ 298,174
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch		EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR		EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor		EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- PAR	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker		EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	9,798,059.00	3,520.00	880.00	\$ 9,798,059	\$ 3,520	\$ 880	\$ 9,802,459
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Circuit Breaker,	0	EA	112,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Circuit Breaker, reinstallation only	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.28	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.29	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
4.30	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 9,798,059	\$ 3,520	\$ 880	\$ 9,802,459
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,000	LF	5.30	1.43	0.29	\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 15,893	\$ 4,298	\$ 860	\$ 21,050
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	188	LF	266.50	53.04	13.26	\$ 49,969	\$ 9,945	\$ 2,486	\$ 62,400
6.7							\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Conduit	420	LF	266.73	202.15	100.00	\$ 112,027	\$ 84,902	\$ 42,002	\$ 238,931
6.9	345kV UG- Cable	1,260	LF	167.00	100.20	66.80	\$ 210,420	\$ 126,252	\$ 84,168	\$ 420,840
6.10	345kV UG- Termination	9	EA	27,805.00	9,846.48	2,813.28	\$ 250,245	\$ 88,618	\$ 25,320	\$ 364,183
6.11	Fiber Optic Cable	420	LF	7.40	3.33	2.22	\$ 3,107	\$ 1,399	\$ 933	\$ 5,438
6.12	Ground Continuity Conductor	420	LF	13.04	7.53	5.02	\$ 5,476	\$ 3,161	\$ 2,108	\$ 10,745
6.13							\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 637,934	\$ 320,757	\$ 160,256	\$ 1,118,947
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	550	LF	2.09	3.42	1.46	\$ 1,150	\$ 1,878	\$ 805	\$ 3,834
7.2	Caweld, DSA, 4/0 , T, CROSS	20	EA	165.00	75.00		\$ 3,300	\$ 1,500	\$ -	\$ 4,800
7.3	Ground Rod, 3/4" x 15'	12	EA	135.00	67.50	7.50	\$ 1,620	\$ 810	\$ 90	\$ 2,520
TOTAL - GROUND GRID							\$ 6,070	\$ 4,188	\$ 895	\$ 11,154
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE I90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.8	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10.Shore Road 138kV Substation Upgrades							\$ 10,847,849	\$ 641,899	\$ 322,008	\$ 11,811,757

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		33,736.77	14,458.62	\$ -	\$ 33,737	\$ 14,459	\$ 48,195
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		118,117.57		\$ -	\$ 118,118	\$ -	\$ 118,118
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		472,470.27		\$ -	\$ 472,470	\$ -	\$ 472,470
9.4	Utility PM and Project Oversight	1	LS		118,117.57		\$ -	\$ 118,118	\$ -	\$ 118,118
9.5	Site Accommodation, Facilities, Storage	1	LS	118,117.57			\$ 118,118	\$ -	\$ -	\$ 118,118
	Engineering									
9.6	Design Engineering	1.00	LS		944,940.54		\$ -	\$ 944,941	\$ -	\$ 944,941
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	0.10	Site		82,682.30		\$ -	\$ 8,268	\$ -	\$ 8,268
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		442,940.88		\$ -	\$ 442,941	\$ -	\$ 442,941
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		118,117.57		\$ -	\$ 118,118	\$ -	\$ 118,118
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		35,435.27		\$ -	\$ 35,435	\$ -	\$ 35,435
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 440,000	\$ -	\$ -	\$ 440,000	\$ 440,000
9.20	Sales Tax on Materials	8.80%	LS	10,847,849.05			\$ 954,611	\$ -	\$ -	\$ 954,611
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		11,811.76		\$ -	\$ 11,812	\$ -	\$ 11,812
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,072,728	\$ 2,306,686	\$ 456,279	\$ 3,835,693

<u>NEXTera Energy- TO44 Enhanced 2</u> <u>19.Holbrook 138kV Substation Upgrades</u>		
Total:	\$	4,300,301

<u>NEXTera Energy- TO44 Enhanced 2</u> <u>19.Holbrook 138kV Substation Upgrades</u>		
Total:	\$	4,300,301

NEXtera Energy- TO44 Enhanced 2

19.Holbrook 138kV Substation Upgrades

Total: \$ 4,300,301

<i>NEXtera Energy- TO44 Enhanced 2</i>				
	<i>Material Supply</i>	<i>Labor Supply</i>	<i>Equip Supply</i>	<i>Total</i>
19.Holbrook 138kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 231,611	\$ 238,850	\$ 140,472	\$ 610,933
2. SUBSTATION FOUNDATIONS	\$ 90,358	\$ 103,266	\$ 64,541	\$ 258,165
3. SUBSTATION STRUCTURES	\$ 181,017	\$ 269,516	\$ 172,258	\$ 622,791
4. MAJOR EQUIPMENT	\$ 287,198	\$ 83,278	\$ 37,752	\$ 408,228
5. LOW VOLTAGE & CONTROL CABLE	\$ 54,035	\$ 14,612	\$ 2,922	\$ 71,568
6. CONDUIT & CABLE TRENCH	\$ 143,326	\$ 43,971	\$ 15,853	\$ 203,150
7. GROUND GRID	\$ 29,940	\$ 21,076	\$ 4,704	\$ 55,719
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 116,451	\$ 496,141	\$ 108,476	\$ 721,068
SUBTOTAL (Costs):	\$ 1,176,592	\$ 1,304,834	\$ 555,509	\$ 3,036,935
CONTRACTOR MARK-UP (OH&P)	\$ 211,787	\$ 234,870	\$ 99,992	\$ 546,648
SUBTOTAL:	\$ 1,388,379	\$ 1,539,705	\$ 655,501	\$ 3,583,584
CONTINGENCY ON ENTIRE PROJECT	\$ 277,676	\$ 307,941	\$ 131,100	\$ 716,717
TOTAL:	\$ 1,666,054	\$ 1,847,645	\$ 786,601	\$ 4,300,301

Description of Work: Install a new breaker at Holbrook 138 kV substation to create a new terminal										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.7	ACRE	-	10,800.00	7,200.00	\$ -	\$ 7,560	\$ 5,040	\$ 12,600
1.2	Demolition	1	LS		24,000.00	16,000.00	\$ -	\$ 24,000	\$ 16,000	\$ 40,000
1.3	New Access Road - 20'	967	SY	4.85	7.20	4.80	\$ 4,688	\$ 6,960	\$ 4,640	\$ 16,288
1.4	Strip and Dispose Top Soil	1,129	CY		24.50	10.50	\$ -	\$ 27,669	\$ 11,858	\$ 39,527
1.5	Site Grading- Excavation for Substation Pad	3,388	CY		9.00	6.00	\$ -	\$ 30,492	\$ 20,328	\$ 50,820
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,830	CY		21.00	9.00	\$ -	\$ 38,419.92	\$ 16,465.68	\$ 54,885.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,744	CY		2.40	1.60	\$ -	\$ 6,586	\$ 4,391	\$ 10,977
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,830	CY	25.00	2.40	1.60	\$ 45,738	\$ 4,391	\$ 2,927	\$ 53,056
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,388	SY	11.00	6.00	4.00	\$ 37,268	\$ 20,328	\$ 13,552	\$ 71,148
1.11	Site Surfacing - Aggregate 6" Thick	3,388	SY	16.50	4.50	3.00	\$ 55,902	\$ 15,246	\$ 10,164	\$ 81,312
1.12	7' Station Fence w/ Barbed Wire & Grounding	435	LF	13.85	13.85	6.92	\$ 6,024	\$ 6,024	\$ 3,012	\$ 15,060
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	75,000.00	45,000.00	30,000.00	\$ 75,000	\$ 45,000	\$ 30,000	\$ 150,000
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	870	LF	2.41	3.16	0.72	\$ 2,097	\$ 2,749	\$ 626	\$ 5,472
1.18	Temporary fencing	653	LF	7.50	5.25	2.25	\$ 4,894	\$ 3,426	\$ 1,468	\$ 9,788
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 231,611	\$ 238,850	\$ 140,472	\$ 610,933
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	9	CY	703.89	804.44	502.78	\$ 6,265	\$ 7,160	\$ 4,475	\$ 17,899
2.24	138kV, Bus support-3 Ph, low	27	CY	703.89	804.44	502.78	\$ 18,829	\$ 21,519	\$ 13,449	\$ 53,797
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	36	CY	703.89	804.44	502.78	\$ 25,607	\$ 29,266	\$ 18,291	\$ 73,164
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 90,358	\$ 103,266	\$ 64,541	\$ 258,165
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'		EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch		EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	5	EA	4,173.00	2,879.76	1,919.84	\$ 20,865	\$ 14,399	\$ 9,599	\$ 44,863
3.14	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	4	EA	4,896.84	4,896.84	2,448.42	\$ 19,587	\$ 19,587	\$ 9,794	\$ 48,968
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	2	EA	33,000.00	19,800.00	13,200.00	\$ 66,000	\$ 39,600	\$ 26,400	\$ 132,000
3.19	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	831	LF	25.00	184.94	123.29	\$ 20,775	\$ 153,683	\$ 102,456	\$ 276,914
3.22	AL. Bus fittings	1	LS	24,930.00	24,930.00	12,465.00	\$ 24,930	\$ 24,930	\$ 12,465	\$ 62,325
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 181,017	\$ 269,516	\$ 172,258	\$ 622,791
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades							\$ 1,060,141	\$ 808,693	\$ 447,033	\$ 2,315,867
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		43,950.42	18,835.89	\$ -	\$ 43,950	\$ 18,836	\$ 62,786
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		23,158.67		\$ -	\$ 23,159	\$ -	\$ 23,159
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		92,634.69		\$ -	\$ 92,635	\$ -	\$ 92,635
9.4	Utility PM and Project Oversight	1	LS		23,158.67		\$ -	\$ 23,159	\$ -	\$ 23,159
9.5	Site Accommodation, Facilities, Storage	1	LS	23,158.67			\$ 23,159	\$ -	\$ -	\$ 23,159
	Engineering									
9.6	Design Engineering	1.00	LS		185,269.38		\$ -	\$ 185,269	\$ -	\$ 185,269
9.7	LIDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.20	Site		16,211.07		\$ -	\$ 3,242	\$ -	\$ 3,242
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		86,845.02		\$ -	\$ 86,845	\$ -	\$ 86,845
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		23,158.67		\$ -	\$ 23,159	\$ -	\$ 23,159
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		6,947.60		\$ -	\$ 6,948	\$ -	\$ 6,948
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 86,000	\$ -	\$ -	\$ 86,000	\$ 86,000
9.20	Sales Tax on Materials	8.80%	LS	1,060,140.93			\$ 93,292	\$ -	\$ -	\$ 93,292
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,315.87		\$ -	\$ 2,316	\$ -	\$ 2,316
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 116,451	\$ 496,141	\$ 108,476	\$ 721,068

NEXtera Energy- TO44 Enhanced 2

20- Ramapo 345kV Substation Upgrades

Total: \$ 12,574,005

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
20- Ramapo 345kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 123,891	\$ 146,057	\$ 82,932	\$ 352,880
2. SUBSTATION FOUNDATIONS	\$ 178,174	\$ 203,628	\$ 127,267	\$ 509,070
3. SUBSTATION STRUCTURES	\$ 297,191	\$ 160,223	\$ 94,769	\$ 552,182
4. MAJOR EQUIPMENT	\$ 3,171,092	\$ 499,674	\$ 296,826	\$ 3,967,592
5. LOW VOLTAGE & CONTROL CABLE	\$ 58,802	\$ 15,901	\$ 3,180	\$ 77,883
6. CONDUIT & CABLE TRENCH	\$ 512,437	\$ 251,166	\$ 129,158	\$ 892,761
7. GROUND GRID	\$ 24,512	\$ 17,617	\$ 4,057	\$ 46,185
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 466,630	\$ 1,396,829	\$ 276,686	\$ 2,140,145
SUBTOTAL (Costs):	\$ 5,003,354	\$ 2,827,593	\$ 1,049,000	\$ 8,879,947
CONTRACTOR MARK-UP (OH&P)	\$ 900,604	\$ 508,967	\$ 188,820	\$ 1,598,390
SUBTOTAL:	\$ 5,903,957	\$ 3,336,560	\$ 1,237,820	\$ 10,478,338
CONTINGENCY ON ENTIRE PROJECT	\$ 1,180,791	\$ 667,312	\$ 247,564	\$ 2,095,668
TOTAL:	\$ 7,084,749	\$ 4,003,872	\$ 1,485,384	\$ 12,574,005

Description of Work: Install a new PAR and additonal CB to existing bay										
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Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10.Shore Road 138kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 5,400	\$ 3,600	\$ 9,000
1.2	Demolition	1	LS		12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	1,111	SY	4.85	7.20	4.80	\$ 5,389	\$ 8,000	\$ 5,333	\$ 18,722
1.4	Strip and Dispose Top Soil	807	CY		24.50	10.50	\$ -	\$ 19,763	\$ 8,470	\$ 28,233
1.5	Site Grading- Excavation for Substation Pad	2,420	CY		9.00	6.00	\$ -	\$ 21,780	\$ 14,520	\$ 36,300
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	1,307	CY		21.00	9.00	\$ -	\$ 27,442.80	\$ 11,761.20	\$ 39,204.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,960	CY		2.40	1.60	\$ -	\$ 4,704	\$ 3,136	\$ 7,841
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,307	CY	25.00	2.40	1.60	\$ 32,670	\$ 3,136	\$ 2,091	\$ 37,897
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	2,420	SY	11.00	6.00	4.00	\$ 26,620	\$ 14,520	\$ 9,680	\$ 50,820
1.11	Site Surfacing - Aggregate 6" Thick	2,420	SY	16.50	4.50	3.00	\$ 39,930	\$ 10,890	\$ 7,260	\$ 58,080
1.12	7' Station Fence w/ Barbed Wire & Grounding	460	LF	13.85	13.85	6.92	\$ 6,370	\$ 6,370	\$ 3,185	\$ 15,925
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	75,000.00	45,000.00	30,000.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	3,680	SF	1.50	1.50	1.00	\$ 5,520	\$ 5,520	\$ 3,680	\$ 14,720
1.17	Erosion Control-Silt fence install & remove	920	LF	2.41	3.16	0.72	\$ 2,217	\$ 2,907	\$ 662	\$ 5,787
1.18	Temporary fencing	690	LF	7.50	5.25	2.25	\$ 5,175	\$ 3,623	\$ 1,553	\$ 10,350
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 123,891	\$ 146,057	\$ 82,932	\$ 352,880
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	73	CY	703.89	804.44	502.78	\$ 51,609	\$ 58,982	\$ 36,863	\$ 147,454

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 16,724	\$ 19,113	\$ 11,946	\$ 47,784
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-75MVAR	100	CY	703.89	804.44	502.78	\$ 70,389	\$ 80,444	\$ 50,278	\$ 201,110
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Shunt Reactor with oil containment-250MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker,	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.33	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.34	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 178,174	\$ 203,628	\$ 127,267	\$ 509,070
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast		EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	2	EA	48,100.00	28,860.00	19,240.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.3	345kV, Bus support-3 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end		EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Surge arrester	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.12	345kV, CCVT		EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low		EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA	4,896.84	4,896.84	2,448.42	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 297,191	\$ 160,223	\$ 94,769	\$ 552,182
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-75MVAR	1	EA	2,277,924.50	3,520.00	880.00	\$ 2,277,925	\$ 3,520	\$ 880	\$ 2,282,325
4.10	Transport & Testing- Shunt Reactor	1	EA		261,400.00	170,600.00	\$ -	\$ 261,400	\$ 170,600	\$ 432,000
4.11	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- PAR	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	3	EA	6,669.00	5,460.00	2,340.00	\$ 20,007	\$ 16,380	\$ 7,020	\$ 43,407
4.18	138kV, Phase Angle Regulator with oil containment	0	EA	9,798,059.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		336,400.00	220,600.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Shunt Reactor with oil containment-250MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Shunt Reactor	0	EA		204,400.00	132,600.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Circuit Breaker,	0	EA	112,000.00	13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Circuit Breaker, reinstallation only	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.28	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
4.29	138kV, Surge arrester	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
4.30	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,171,092	\$ 499,674	\$ 296,826	\$ 3,967,592
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	11,100	LF	5.30	1.43	0.29	\$ 58,802	\$ 15,901	\$ 3,180	\$ 77,883
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 58,802	\$ 15,901	\$ 3,180	\$ 77,883
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,950	LF	11.15	10.80	5.40	\$ 21,743	\$ 21,060	\$ 10,530	\$ 53,333
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	538	LF	266.50	53.04	13.26	\$ 143,244	\$ 28,509	\$ 7,127	\$ 178,880
6.7							\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Conduit	335	LF	266.73	202.15	100.00	\$ 89,355	\$ 67,719	\$ 33,502	\$ 190,576
6.9	345kV UG- Cable	1,005	LF	167.00	100.20	66.80	\$ 167,835	\$ 100,701	\$ 67,134	\$ 335,670
6.10	345kV UG- Termination	3	EA	27,805.00	9,846.48	2,813.28	\$ 83,415	\$ 29,539	\$ 8,440	\$ 121,394
6.11	Fiber Optic Cable	335	LF	7.40	3.33	2.22	\$ 2,478	\$ 1,116	\$ 744	\$ 4,338
6.12	Ground Continuity Conductor	335	LF	13.04	7.53	5.02	\$ 4,368	\$ 2,522	\$ 1,681	\$ 8,571
6.13							\$ -	\$ -	\$ -	\$ -
6.14							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 512,437	\$ 251,166	\$ 129,158	\$ 892,761
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,490	LF	2.09	3.42	1.46	\$ 5,207	\$ 8,504	\$ 3,645	\$ 17,355
7.2	Caweld, DSA, 4/0 , T, CROSS	72	EA	165.00	75.00		\$ 11,880	\$ 5,400	\$ -	\$ 17,280
7.3	Ground Rod, 3/4" x 15'	55	EA	135.00	67.50	7.50	\$ 7,425	\$ 3,713	\$ 413	\$ 11,550
TOTAL - GROUND GRID							\$ 24,512	\$ 17,617	\$ 4,057	\$ 46,185
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	2,226,935.13	1,558,854.59	668,080.54	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.12	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.14	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
10.Shore Road 138kV Substation Upgrades							\$ 4,536,724	\$ 1,430,764	\$ 772,314	\$ 6,739,802
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		77,107.73	33,046.17	\$ -	\$ 77,108	\$ 33,046	\$ 110,154
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		67,398.02		\$ -	\$ 67,398	\$ -	\$ 67,398
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		269,592.08		\$ -	\$ 269,592	\$ -	\$ 269,592
9.4	Utility PM and Project Oversight	1	LS		67,398.02		\$ -	\$ 67,398	\$ -	\$ 67,398
9.5	Site Accommodation, Facilities, Storage	1	LS	67,398.02			\$ 67,398	\$ -	\$ -	\$ 67,398
	Engineering									
9.6	Design Engineering	1.00	LS		539,184.16		\$ -	\$ 539,184	\$ -	\$ 539,184
9.7	LiDAR /GPR	1.00	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	0.50	Site		47,178.61		\$ -	\$ 23,589	\$ -	\$ 23,589
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		252,742.58		\$ -	\$ 252,743	\$ -	\$ 252,743
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,398.02		\$ -	\$ 67,398	\$ -	\$ 67,398
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		20,219.41		\$ -	\$ 20,219	\$ -	\$ 20,219
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 240,000	\$ -	\$ -	\$ 240,000	\$ 240,000
9.20	Sales Tax on Materials	8.80%	LS	4,536,724.06			\$ 399,232	\$ -	\$ -	\$ 399,232
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,739.80		\$ -	\$ 6,740	\$ -	\$ 6,740
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 466,630	\$ 1,396,829	\$ 276,686	\$ 2,140,145

NEXtera Energy- TO44 Enhanced 2
21. Existing Ruland Road 138 kV Substation
 Total: \$ 2,030,035

NEXtera Energy- TO44 Enhanced 2
21. Existing Ruland Road 138 kV Substation

NEXtera Energy- TO44 Enhanced 2

21. Existing Ruland Road 138 kV Substation

Total: \$ 2,030,035

<i>NEXtera Energy- TO44 Enhanced 2</i>				
	<i>Material Supply</i>	<i>Labor Supply</i>	<i>Equip Supply</i>	<i>Total</i>
21. Existing Ruland Road 138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246
SUBTOTAL (Costs):	\$ 1,091,305	\$ 280,138	\$ 62,198	\$ 1,433,641
CONTRACTOR MARK-UP (OH&P)	\$ 196,435	\$ 50,425	\$ 11,196	\$ 258,055
SUBTOTAL:	\$ 1,287,740	\$ 330,563	\$ 73,394	\$ 1,691,696
CONTINGENCY ON ENTIRE PROJECT	\$ 257,548	\$ 66,113	\$ 14,679	\$ 338,339
TOTAL:	\$ 1,545,287	\$ 396,675	\$ 88,072	\$ 2,030,035

Description of Work: Modification at existing 138kv Ruland station (replace with two hybrid circuit breaker)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
21. Existing Ruland Road 138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
=3*3	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
11	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-275MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Circuit Breaker, Hybrid circuit breaker	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.23	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.18	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.19	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus fittings		LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.24	Steel grating and support beams-transformer moat		LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA	5,020,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		777,400.00	514,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-275MVAR	0	EA	3,332,488.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		426,650.00	182,850.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA	350,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	478,750.00	287,250.00	191,500.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker, Hybrid circuit breaker	1	EA	920,000.00	13,559.00	5,811.00	\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	0	EA	11,600.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 920,000	\$ 13,559	\$ 5,811	\$ 939,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7										
6.8	138kV UG- Conduit		LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.9	138kV UG- Cable	0	LF	145.00	87.00	58.00	\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.11	Fiber Optic Cable	0	LF	7.40	3.33	2.22	\$ -	\$ -	\$ -	\$ -
6.12	Ground Continuity Conductor	0	LF	13.04	7.53	5.02	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345kv Control Bldg	0	EA	407,211.00	285,047.70	122,163.30	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.15	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.16	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.17	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.18	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.19	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.20	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.21	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.22	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
21. Existing Ruland Road 138 kV Substation							\$ 993,135	\$ 63,326	\$ 20,934	\$ 1,077,395
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		2,949.11	1,263.90	\$ -	\$ 2,949	\$ 1,264	\$ 4,213
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		43,095.80		\$ -	\$ 43,096	\$ -	\$ 43,096
9.4	Utility PM and Project Oversight	1	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.5	Site Accommodation, Facilities, Storage	1	LS	10,773.95			\$ 10,774	\$ -	\$ -	\$ 10,774
	Engineering									
9.6	Design Engineering	1.00	LS		86,191.60		\$ -	\$ 86,192	\$ -	\$ 86,192
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		7,541.77		\$ -	\$ 7,542	\$ -	\$ 7,542
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		40,402.31		\$ -	\$ 40,402	\$ -	\$ 40,402
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,773.95		\$ -	\$ 10,774	\$ -	\$ 10,774
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,232.19		\$ -	\$ 3,232	\$ -	\$ 3,232
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	1,158,245.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	34,747.35	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 40,000	\$ -	\$ -	\$ 40,000	\$ 40,000
9.20	Sales Tax on Materials	8.80%	LS	993,134.86			\$ 87,396	\$ -	\$ -	\$ 87,396
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,077.40		\$ -	\$ 1,077	\$ -	\$ 1,077
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 98,170	\$ 216,812	\$ 41,264	\$ 356,246

NEXTera Energy- TO44 Enhanced 2

22. Existing East Garden City 138 kV Substation Upgrades

Total: \$ 28,298,464

NEXTera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
22. Existing East Garden City 138 kV Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES	\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT	\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH	\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID	\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE	\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374
SUBTOTAL (Costs):	\$ 13,496,376	\$ 4,886,771	\$ 1,601,644	\$ 19,984,791
CONTRACTOR MARK-UP (OH&P)	\$ 2,429,348	\$ 879,619	\$ 288,296	\$ 3,597,262
SUBTOTAL:	\$ 15,925,724	\$ 5,766,390	\$ 1,889,940	\$ 23,582,053
CONTINGENCY ON ENTIRE PROJECT	\$ 3,185,145	\$ 1,153,278	\$ 377,988	\$ 4,716,411
TOTAL:	\$ 19,110,868	\$ 6,919,667	\$ 2,267,928	\$ 28,298,464

Description of Work: Modification at existing 138kv EGC station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
22. Existing East Garden City 138 kV Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing		ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition		LS	-	900,000.00	600,000.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'		SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil		CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad		CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal		CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)		CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base		SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick		SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding		LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding		EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate		EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator		LS	446,976.00	115,200.00	76,104.00	\$ -	\$ -	\$ -	\$ -
1.16	Seeding		SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove		LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing		LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt		SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb		LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-225MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-25MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345Kv, GIS Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker, Hybrid circuit breaker	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, GIS Enclosure-BLDG & control room	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 249,640	\$ 285,303	\$ 178,314	\$ 713,257
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	15	EA	2,782.00	1,919.84	1,279.89	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.15	138kV, Disconnect Switch	3	EA	4,896.84	4,896.84	2,448.42	\$ 14,691	\$ 14,691	\$ 7,345	\$ 36,726
3.16	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,100	LF	25.00	184.94	123.29	\$ 27,500	\$ 203,432	\$ 135,621	\$ 366,553
3.22	AL. Bus fittings	1	LS	33,000.00	33,000.00	45,000.00	\$ 33,000	\$ 33,000	\$ 45,000	\$ 111,000
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 261,466	\$ 347,805	\$ 240,376	\$ 849,646
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, Cable sealing end	0	EA	17,400.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-225MVAR	0	EA	3,026,425.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA	2,629,516.50	3,520.00	880.00				
4.10	345kV, Shunt Reactor with oil containment-50MVAR	0	EA	2,138,451.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-25MVAR	0	EA	1,900,130.50	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		424,900.00	279,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA	12,882,000.00	3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.14	Transport & Testing- PAR	0	EA		615,400.00	406,600.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR	838,571.43	503,142.86	335,428.57	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	0	EA	6,669.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Phase Angle Regulator with oil containment	1	EA	10,366,370.00	3,520.00	880.00	\$ 10,366,370	\$ 3,520	\$ 880	\$ 10,370,770
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		336,400.00	220,600.00	\$ -	\$ 336,400	\$ 220,600	\$ 557,000
4.22	138kV, Gas Insulated Switchgear, BAAH Arrangement	0	BKR		205,800.00	4,200.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker, Hybrid circuit breaker	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.25	138kV, Cable sealing end	6	EA	11,600.00	5,460.00	2,340.00	\$ 69,600	\$ 32,760	\$ 14,040	\$ 116,400
4.26	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.28	Station service transformers- 120/208v-250VA	0	EA	260,000.00	45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,602,422	\$ 458,707	\$ 272,389	\$ 11,333,517
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,800	LF	5.30	1.43	0.29	\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 25,428	\$ 6,876	\$ 1,375	\$ 33,679
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,050	LF	11.15	10.80	5.40	\$ 11,708	\$ 11,340	\$ 5,670	\$ 28,718
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG- Conduit	720	LF	266.73	202.15	100.00	\$ 192,046	\$ 145,545	\$ 72,004	\$ 409,595
6.9	138kV UG- Cable	2,268	LF	145.00	87.00	58.00	\$ 328,860	\$ 197,316	\$ 131,544	\$ 657,720
6.10	138kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	345kV UG- Conduit	0	LF	266.73	202.15	100.00	\$ -	\$ -	\$ -	\$ -
6.12	345kV UG- Cable		LF	167.00	100.20	66.80	\$ -	\$ -	\$ -	\$ -
6.13	345kV UG- Termination		EA	27,805.00	9,846.48	2,813.28	\$ -	\$ -	\$ -	\$ -
6.14	Fiber Optic Cable	720	LF	7.40	3.33	2.22	\$ 5,326	\$ 2,398	\$ 1,599	\$ 9,323
6.15	Ground Continuity Conductor	720	LF	13.04	7.53	5.02	\$ 9,388	\$ 5,419	\$ 3,613	\$ 18,420
TOTAL - CONDUIT & CABLE TRENCH							\$ 814,095	\$ 440,988	\$ 236,281	\$ 1,491,364
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,470	LF	2.09	3.42	1.46	\$ 3,074	\$ 5,020	\$ 2,152	\$ 10,246
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,819	\$ 10,555	\$ 2,392	\$ 27,766
8. CONTROL ENCLOSURE										
8.1	345kv GIS Bldg	0	EA	3,817,603.08	2,672,322.16	1,145,280.92	\$ -	\$ -	\$ -	\$ -
8.2	138kv GIS/Control Bldg	0	EA	1,145,280.92	801,696.65	343,584.28	\$ -	\$ -	\$ -	\$ -
8.3	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.14	Primary Line Relays (87L): SEL-411L		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.15	Backup Line Relays (87L): GE L90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.16	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.17	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.18	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.19	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.20	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.21	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.22	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.23	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.24	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.25	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 298,594	\$ 238,875	\$ 59,719	\$ 597,187
22. Existing East Garden City 138 kV Substation Upgrades							\$ 12,266,463	\$ 1,789,109	\$ 990,845	\$ 15,046,417
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		97,298.38	41,699.31	\$ -	\$ 97,298	\$ 41,699	\$ 138,998
Project Management, Material Handling & Amenities										
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		601,856.67		\$ -	\$ 601,857	\$ -	\$ 601,857
9.4	Utility PM and Project Oversight	1	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.5	Site Accommodation, Facilities, Storage	1	LS	150,464.17			\$ 150,464	\$ -	\$ -	\$ 150,464
Engineering										
9.6	Design Engineering	1.00	LS		1,203,713.34		\$ -	\$ 1,203,713	\$ -	\$ 1,203,713
9.7	LiDAR /GPR	-	LS				\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,324.92		\$ -	\$ 105,325	\$ -	\$ 105,325
Testing & Commissioning										
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,240.63		\$ -	\$ 564,241	\$ -	\$ 564,241
Permitting and Additional Costs										
9.11	Physical Security		LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,464.17		\$ -	\$ 150,464	\$ -	\$ 150,464
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,139.25		\$ -	\$ 45,139	\$ -	\$ 45,139
9.15	Laydown Lease	-	LS				\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-	31,050,000.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	931,500.00	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	12,266,462.98			\$ 1,079,449	\$ -	\$ -	\$ 1,079,449
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		15,046.42		\$ -	\$ 15,046	\$ -	\$ 15,046
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,229,913	\$ 3,097,662	\$ 610,799	\$ 4,938,374

NEXtera Energy- TO44 Enhanced 2

Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit
(EGC To Dunwoodie 345 kV)

Total: \$ 188,625,656

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560
SUBTOTAL (Costs):	\$ 47,030,531	\$ 56,737,840	\$ 29,441,838	\$ 133,210,209
CONTRACTOR MARK-UP (OH&P)	\$ 8,465,496	\$ 10,212,811	\$ 5,299,531	\$ 23,977,838
SUBTOTAL:	\$ 55,496,027	\$ 66,950,651	\$ 34,741,369	\$ 157,188,047
CONTINGENCY ON ENTIRE PROJECT	\$ 11,099,205	\$ 13,390,130	\$ 6,948,274	\$ 31,437,609
TOTAL:	\$ 66,595,232	\$ 80,340,781	\$ 41,689,643	\$ 188,625,656

Description of Work: Dunwoodie - New Rochelle Landing (single cable duct). 5000 kcmil copper XLPE, single cable per phase.										
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Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,747,000	\$ 2,463,000	\$ 8,210,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,349	LF	\$ 30	\$ 18	\$ 12	\$ 1,300,464	\$ 780,278	\$ 520,186	\$ 2,600,928
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 328,400	\$ 985,200	\$ 328,400	\$ 1,642,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,044,864	\$ 10,048,478	\$ 4,020,386	\$ 16,113,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,147,758	\$ 765,172	\$ 1,912,930
2.2	Formwork in Trench	335,070	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 670,141	\$ 502,606	\$ 167,535	\$ 1,340,282
2.3	Trench Excavation	16,754	CY		\$ 17.5	\$ 7.5	\$ -	\$ 293,187	\$ 125,651	\$ 418,838
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,745	SF	\$ 50	\$ 25	\$ 14	\$ 87,258	\$ 42,756	\$ 24,432	\$ 154,447
2.5	Supply & Install Thermal Backfill	14,659	CY	\$ 350	\$ 245	\$ 105	\$ 5,130,766	\$ 3,591,536	\$ 1,539,230	\$ 10,261,531
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,825	CY	\$ 200	\$ 125	\$ 50	\$ 1,364,947	\$ 853,092	\$ 341,237	\$ 2,559,275
2.9	Conduit 8" SCH 40PVC	173,395	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,959,103	\$ 983,151	\$ 421,350	\$ 6,363,604
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,698	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 305,176	\$ 273,097	\$ 117,042	\$ 695,315
2.12	Warning Tape	86,698	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,005	\$ 21,674	\$ 8,670	\$ 43,349
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,992	CY		\$ 17.5	\$ 7.5	\$ -	\$ 52,360	\$ 22,440	\$ 74,800
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	898	CY		\$ 14.0	\$ 6.0	\$ -	\$ 12,566	\$ 5,386	\$ 17,952

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	565	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 452,000	\$ 904,000	\$ 904,000	\$ 2,260,000
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	260,093	LF			\$ 0.25	\$ -	\$ -	\$ 65,023	\$ 65,023
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 229,199	\$ 229,199	\$ 114,600	\$ 572,998
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,548	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 101,775	\$ 106,864	\$ 45,799	\$ 254,438
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,299	\$ 81,897	\$ 109,196
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 682	\$ 1,024	\$ 1,706
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	147	EA		\$ 400	\$ 1,200	\$ -	\$ 58,637	\$ 175,912	\$ 234,549
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	24,502	CY		\$ 24.5	\$ 10.5	\$ -	\$ 600,306	\$ 257,274	\$ 857,580
2.27	Rock Excavation and Removal	13,164	CY		\$ 243	\$ 162	\$ -	\$ 3,198,774	\$ 2,132,516	\$ 5,331,290
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	19,746	CF		\$ 1.0	\$ 0.5	\$ -	\$ 19,746	\$ 9,873	\$ 29,618
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,363,368	\$ 14,404,930	\$ 9,713,465	\$ 38,481,763
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	136,549	FT	\$ 167	\$ 100	\$ 67	\$ 22,803,636	\$ 13,682,182	\$ 9,121,454	\$ 45,607,272
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 856,454	\$ 513,872	\$ 342,581	\$ 1,712,907
3.11	Fiber Optic Cable	45,516	FT	\$ 7	\$ 3	\$ 2	\$ 336,684	\$ 151,596	\$ 101,064	\$ 589,344
3.12	Ground Continuity Conductor	45,516	FT	\$ 13	\$ 8	\$ 5	\$ 593,486	\$ 342,601	\$ 228,400	\$ 1,164,487
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,812,070	\$ 15,635,513	\$ 10,063,576	\$ 51,511,158
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 42,220,302	\$ 40,088,921	\$ 23,797,426	\$ 106,106,649
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,916,590	\$ 1,277,727	\$ -	\$ 1,916,590	\$ 1,277,727	\$ 3,194,317
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		4,244,265.98		\$ -	\$ 4,244,266	\$ -	\$ 4,244,266
4.4	Utility PM and Project Oversight	1	LS		1,061,066.49		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.5	Site Accommodation, Facilities, Storage	1	LS	1,061,066.49			\$ 1,061,066	\$ -	\$ -	\$ 1,061,066
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,305,332	\$ -	\$ -	\$ 5,305,332	\$ -	\$ 5,305,332
4.7	LiDAR / GPR	1.0	LS		\$ 190,992	\$ 127,328	\$ -	\$ 190,992	\$ 127,328	\$ 318,320
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 445,648	\$ 297,099	\$ -	\$ 445,648	\$ 297,099	\$ 742,747
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,061,066		\$ -	\$ 1,061,066	\$ -	\$ 1,061,066
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 318,320		\$ -	\$ 318,320	\$ -	\$ 318,320
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 58,031	\$ -	\$ -	\$ 58,031	\$ 58,031
4.16	Legal Fees (Real estate)	1.00	LS		-	1,740.93	\$ -	\$ -	\$ 1,741	\$ 1,741
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,760,000	\$ -	\$ -	\$ 3,760,000	\$ 3,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 42,220,301.83			\$ 3,749,163	\$ -	\$ -	\$ 3,749,163
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 106,107	\$ -	\$ -	\$ 106,107	\$ 106,107
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,810,229	\$ 16,648,918	\$ 5,644,412	\$ 27,103,560

NEXtera Energy- TO44 Enhanced 2

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits

(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)

Total: \$ 346,473,248

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
=A18				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632
SUBTOTAL (Costs):	\$ 92,520,355	\$ 99,703,098	\$ 52,461,045	\$ 244,684,497
CONTRACTOR MARK-UP (OH&P)	\$ 16,653,664	\$ 17,946,558	\$ 9,442,988	\$ 44,043,210
SUBTOTAL:	\$ 109,174,018	\$ 117,649,655	\$ 61,904,033	\$ 288,727,707
CONTINGENCY ON ENTIRE PROJECT	\$ 21,834,804	\$ 23,529,931	\$ 12,380,807	\$ 57,745,541
TOTAL:	\$ 131,008,822	\$ 141,179,587	\$ 74,284,840	\$ 346,473,248

Description of Work: Dunwoodie - New Rochelle Landing (double circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	520	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 832,000	\$ 2,496,000	\$ 832,000	\$ 4,160,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	20,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,496,000	\$ 561,600	\$ 3,057,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,512,448	\$ 12,822,389	\$ 4,834,059	\$ 20,168,896
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-SP -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	8.47	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	357,773	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 715,546	\$ 536,659	\$ 178,886	\$ 1,431,091
2.3	Trench Excavation	33,790	CY		\$ 17.5	\$ 7.5	\$ -	\$ 591,319	\$ 253,422	\$ 844,741
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,520	CY	\$ 50	\$ 25	\$ 14	\$ 175,988	\$ 86,234	\$ 49,277	\$ 311,498
2.5	Supply & Install Thermal Backfill -conduit level	29,566	CY	\$ 350	\$ 245	\$ 105	\$ 10,348,081	\$ 7,243,657	\$ 3,104,424	\$ 20,696,163
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,774	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,754,851	\$ 1,721,782	\$ 688,713	\$ 5,165,345
2.8	Conduit 8" SCH 40PVC	357,773	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 10,232,302	\$ 2,028,572	\$ 869,388	\$ 13,130,262
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	178,886	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 629,680	\$ 563,492	\$ 241,497	\$ 1,434,669
2.11	Warning Tape	44,722	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,708	\$ 11,180	\$ 4,472	\$ 22,361
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	5,984	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,720	\$ 44,880	\$ 149,600
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000
2.15	Splice Vault Backfill	1,795	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,133	\$ 10,771	\$ 35,904

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	536,659	LF			\$ 0.25	\$ -	\$ -	\$ 134,165	\$ 134,165
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	28,581	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 400,133	\$ 400,133	\$ 200,067	\$ 1,000,333
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,939	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 177,678	\$ 186,562	\$ 79,955	\$ 444,195
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	138	EA		\$ 400	\$ 1,200	\$ -	\$ 55,097	\$ 165,291	\$ 220,388
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	138	EA		\$ 10	\$ 15	\$ -	\$ 1,377	\$ 2,066	\$ 3,444
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	296	EA		\$ 400	\$ 1,200	\$ -	\$ 118,264	\$ 354,791	\$ 473,055
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 462,462	\$ 308,308	\$ -	\$ 462,462	\$ 308,308	\$ 770,770
2.24	Excess Materials Disposal to Certified Backfill	49,372	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,209,614	\$ 518,406	\$ 1,728,020
2.25	Rock Excavation and Removal	26,516	CY		\$ 243	\$ 162	\$ -	\$ 6,443,332	\$ 4,295,555	\$ 10,738,886
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,774	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,774	\$ 19,887	\$ 59,660
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,540,967	\$ 25,088,214	\$ 16,490,743	\$ 69,119,924
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	140,873	FT	\$ 167	\$ 100	\$ 67	\$ 23,525,798	\$ 14,115,479	\$ 9,410,319	\$ 47,051,595
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	93,915	FT	\$ 7	\$ 3	\$ 2	\$ 694,692	\$ 312,794	\$ 208,530	\$ 1,216,016
3.12	Ground Continuity Conductor	93,915	FT	\$ 13	\$ 8	\$ 5	\$ 1,224,562	\$ 706,901	\$ 471,267	\$ 2,402,731
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 53,127,377	\$ 32,168,921	\$ 20,725,748	\$ 106,022,045
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain							\$ 83,180,792	\$ 70,079,524	\$ 42,050,550	\$ 195,310,866
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,363,902	\$ 2,242,601	\$ -	\$ 3,363,902	\$ 2,242,601	\$ 5,606,504
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		7,812,434.62		\$ -	\$ 7,812,435	\$ -	\$ 7,812,435
4.4	Utility PM and Project Oversight	1	LS		1,953,108.66		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.5	Site Accommodation, Facilities, Storage	1	LS	1,953,108.66			\$ 1,953,109	\$ -	\$ -	\$ 1,953,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,765,543	\$ -	\$ -	\$ 9,765,543	\$ -	\$ 9,765,543
4.7	LIDAR /GPR	1.0	LS		\$ 351,560	\$ 234,373	\$ -	\$ 351,560	\$ 234,373	\$ 585,933
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 820,306	\$ 546,870	\$ -	\$ 820,306	\$ 546,870	\$ 1,367,176
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,953,109		\$ -	\$ 1,953,109	\$ -	\$ 1,953,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 585,933		\$ -	\$ 585,933	\$ -	\$ 585,933
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 247,533	\$ -	\$ -	\$ 247,533	\$ 247,533
4.16	Legal Fees (Real estate)	1.00	LS		-	7,425.99	\$ -	\$ -	\$ 7,426	\$ 7,426
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,920,000	\$ -	\$ -	\$ 6,920,000	\$ 6,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 83,180,791.58			\$ 7,386,454	\$ -	\$ -	\$ 7,386,454
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 195,311	\$ -	\$ -	\$ 195,311	\$ 195,311
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,339,563	\$ 29,623,574	\$ 10,410,495	\$ 49,373,632

NEXtera Energy- TO44 Enhanced 2

Comp 4C - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Single circuit

(Northport To Sprain Brook 320 kV DC)

Total: \$ 159,124,018

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 13,444,148	\$ 13,874,209	\$ 9,004,614	\$ 36,322,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 18,612,600	\$ 10,891,459	\$ 7,013,404	\$ 36,517,464
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,926,289	\$ 14,226,390	\$ 4,874,509	\$ 23,027,188
SUBTOTAL (Costs):	\$ 38,079,485	\$ 49,278,448	\$ 25,017,786	\$ 112,375,719
CONTRACTOR MARK-UP (OH&P)	\$ 6,854,307	\$ 8,870,121	\$ 4,503,202	\$ 20,227,629
SUBTOTAL:	\$ 44,933,792	\$ 58,148,568	\$ 29,520,988	\$ 132,603,348
CONTINGENCY ON ENTIRE PROJECT	\$ 8,986,758	\$ 11,629,714	\$ 5,904,198	\$ 26,520,670
TOTAL:	\$ 53,920,551	\$ 69,778,282	\$ 35,425,185	\$ 159,124,018

Description of Work: Northport - New Rochelle Landing (single circuit duct). 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1+20:85	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.47	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,929,000	\$ 2,541,000	\$ 8,470,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,722	LF	\$ 30	\$ 18	\$ 12	\$ 1,341,648	\$ 804,989	\$ 536,659	\$ 2,683,296
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.47	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 338,800	\$ 1,016,400	\$ 338,800	\$ 1,694,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,096,448	\$ 10,286,389	\$ 4,125,259	\$ 16,508,096
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,184,106	\$ 789,404	\$ 1,973,510
2.2	Formwork in Trench	352,013	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 704,026	\$ 528,019	\$ 176,006	\$ 1,408,051
2.3	Trench Excavation	17,601	CY		\$ 17.5	\$ 7.5	\$ -	\$ 308,011	\$ 132,005	\$ 440,016
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,833	SF	\$ 50	\$ 25	\$ 14	\$ 91,670	\$ 44,918	\$ 25,668	\$ 162,256
2.5	Supply & Install Thermal Backfill	15,401	CY	\$ 350	\$ 245	\$ 105	\$ 5,390,196	\$ 3,773,137	\$ 1,617,059	\$ 10,780,392
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,717	CY	\$ 200	\$ 125	\$ 50	\$ 1,543,478	\$ 964,674	\$ 385,870	\$ 2,894,022
2.9	Conduit 8" SCH 40PVC	134,165	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 3,837,113	\$ 760,714	\$ 326,020	\$ 4,923,848
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	134,165	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 472,260	\$ 422,619	\$ 181,122	\$ 1,076,002
2.12	Warning Tape	89,443	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,416	\$ 22,361	\$ 8,944	\$ 44,722
2.13	Trench Box Shoring (Vault)	30	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 542,373	\$ 813,559	\$ 1,355,932
2.14	Splice Vault Excavation	2,464	CY		\$ 17.5	\$ 7.5	\$ -	\$ 43,120	\$ 18,480	\$ 61,600
2.15	Splice Vault Supply & Installation	30	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,050,000	\$ 495,000	\$ 1,155,000	\$ 2,700,000
2.16	Splice Vault Backfill	739	CY		\$ 14.0	\$ 6.0	\$ -	\$ 10,349	\$ 4,435	\$ 14,784
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	268,330	LF			\$ 0.25	\$ -	\$ -	\$ 67,082	\$ 67,082
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,916	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 236,826	\$ 236,826	\$ 118,413	\$ 592,065
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,699	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 105,162	\$ 110,420	\$ 47,323	\$ 262,905
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	77	EA		\$ 400	\$ 1,200	\$ -	\$ 30,870	\$ 92,609	\$ 123,478
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	77	EA		\$ 10	\$ 15	\$ -	\$ 772	\$ 1,158	\$ 1,929
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	154	EA		\$ 400	\$ 1,200	\$ -	\$ 61,602	\$ 184,807	\$ 246,409
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	25,123	CY		\$ 24.5	\$ 10.5	\$ -	\$ 615,515	\$ 263,792	\$ 879,308
2.27	Rock Excavation and Removal	13,376	CY		\$ 243	\$ 162	\$ -	\$ 3,250,472	\$ 2,166,981	\$ 5,417,453
2.28	Dewatering	30	EA			\$ 4,000	\$ -	\$ -	\$ 120,000	\$ 120,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	20,065	CF		\$ 1.0	\$ 0.5	\$ -	\$ 20,065	\$ 10,032	\$ 30,097
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,444,148	\$ 13,874,209	\$ 9,004,614	\$ 36,322,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE	93,915	FT	\$ 166	\$ 100	\$ 66	\$ 15,589,950	\$ 9,353,970	\$ 6,235,980	\$ 31,179,900
3.2	Circuit #1- Cable Splicing- 320 DckV 5000 kcmil copper XLPE	60	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 1,160,940	\$ 590,789	\$ 168,797	\$ 1,920,526
3.3	Circuit #1- Cable Termination- 320 DckV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.4	Circuit #2- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 320 DckV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 320 DckV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320 DckV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320 DckV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	30	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 629,624	\$ 377,774	\$ 251,849	\$ 1,259,247
3.11	Fiber Optic Cable	46,958	FT	\$ 7	\$ 3	\$ 2	\$ 347,346	\$ 156,397	\$ 104,265	\$ 608,008
3.12	Ground Continuity Conductor	46,958	FT	\$ 13	\$ 8	\$ 5	\$ 612,281	\$ 353,450	\$ 235,634	\$ 1,201,365
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 18,612,600	\$ 10,891,459	\$ 7,013,404	\$ 36,517,464
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 34,153,196	\$ 35,052,057	\$ 20,143,277	\$ 89,348,530
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,655,860	\$ 1,103,907	\$ -	\$ 1,655,860	\$ 1,103,907	\$ 2,759,767
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		893,485.30		\$ -	\$ 893,485	\$ -	\$ 893,485
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		3,573,941.22		\$ -	\$ 3,573,941	\$ -	\$ 3,573,941
4.4	Utility PM and Project Oversight	1	LS		893,485.30		\$ -	\$ 893,485	\$ -	\$ 893,485
4.5	Site Accommodation, Facilities, Storage	1	LS	893,485.30			\$ 893,485	\$ -	\$ -	\$ 893,485
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,467,427	\$ -	\$ -	\$ 4,467,427	\$ -	\$ 4,467,427
4.7	LiDAR /GPR	1.0	LS		\$ 160,827	\$ 107,218	\$ -	\$ 160,827	\$ 107,218	\$ 268,046
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 375,264	\$ 250,176	\$ -	\$ 375,264	\$ 250,176	\$ 625,440
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 893,485		\$ -	\$ 893,485	\$ -	\$ 893,485
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 268,046		\$ -	\$ 268,046	\$ -	\$ 268,046
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 123,767	\$ -	\$ -	\$ 123,767	\$ 123,767
4.16	Legal Fees (Real estate)	1.00	LS		-	3,713.00	\$ -	\$ -	\$ 3,713	\$ 3,713
4.17	Insurance	-	LS		-		\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,180,000	\$ -	\$ -	\$ 3,180,000	\$ 3,180,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 34,153,196.04			\$ 3,032,804	\$ -	\$ -	\$ 3,032,804
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 89,349	\$ -	\$ -	\$ 89,349	\$ 89,349
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,926,289	\$ 14,226,390	\$ 4,874,509	\$ 23,027,188

NEXtera Energy- TO44 Enhanced 2

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)
EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV

Total: \$ 745,825,447

Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-Spra				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV				
1. SUBMARINE CABLE	\$ 170,749,328	\$ 149,849,551	\$ 99,574,291	\$ 420,173,170
2. TRANSITION STATION	\$ 1,367,680	\$ 1,706,372	\$ 1,640,135	\$ 4,714,187
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 19,395,170	\$ 62,617,544	\$ 19,812,816	\$ 101,825,530
SUBTOTAL (Costs):	\$ 191,512,178	\$ 214,173,467	\$ 121,027,241	\$ 526,712,886
CONTRACTOR MARK-UP (OH&P)	\$ 34,472,192	\$ 38,551,224	\$ 21,784,903	\$ 94,808,320
SUBTOTAL:	\$ 225,984,370	\$ 252,724,691	\$ 142,812,144	\$ 621,521,206
CONTINGENCY ON ENTIRE PROJECT	\$ 45,196,874	\$ 50,544,938	\$ 28,562,429	\$ 124,304,241
TOTAL:	\$ 271,181,244	\$ 303,269,630	\$ 171,374,573	\$ 745,825,447

Description of Work: New Rochelle landing - Hempstead Harbor Landing. Part of any Dunwoodie to Shore/Ruland/EGC 345 kV project segment (Include HDD's to get onshore at both ends of route) 1600 mm2 Tri-Core

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-Sprain										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 1600 mm2 Tri-Core + Vessel Install	300,390	FT	\$ 537	\$ 400	\$ 250	\$ 161,309,301	\$ 120,155,904	\$ 75,097,440	\$ 356,562,645
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 15,203,818	\$ 10,135,879	\$ -	\$ 15,203,818	\$ 10,135,879	\$ 25,339,697
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.5	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.7	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.8	Fiber Optic Cable	100,130	FT	\$ 7			\$ 740,661	\$ -	\$ -	\$ 740,661
1.9	Ground Continuity Conductor	100,130	FT	\$ 13			\$ 1,305,594	\$ -	\$ -	\$ 1,305,594
1.10							\$ -	\$ -	\$ -	\$ -
1.11	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.12	HDD along Route	4,342	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,947,200	\$ 13,894,400	\$ 13,894,400	\$ 34,736,000
TOTAL - Submarine cable:							\$ 170,749,328	\$ 149,849,551	\$ 99,574,291	\$ 420,173,170
2. TRANSITION STATION										
2.1	Site Clearing	1.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 16,200	\$ 10,800	\$ 27,000
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	2,420	CY		24.50	10.50	\$ -	\$ 59,290	\$ 25,410	\$ 84,700
2.4	Site Grading- Excavation for Substation Pad	7,260	CY		9.00	6.00	\$ -	\$ 65,340	\$ 43,560	\$ 108,900
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	3,920	CY		21.00	9.00	\$ -	\$ 82,328.40	\$ 35,283.60	\$ 117,612.00
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	5,881	CY		2.40	1.60	\$ -	\$ 14,113	\$ 9,409	\$ 23,522
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	3,920	CY	25.00	2.40	1.60	\$ 98,010	\$ 9,409	\$ 6,273	\$ 113,692
2.8	Install substation 8" pad base	7,260	SY	11.00	6.00	4.00	\$ 79,860	\$ 43,560	\$ 29,040	\$ 152,460
2.9	Site Surfacing - Aggregate 6" Thick	7,260	SY	16.50	4.50	3.00	\$ 119,790	\$ 32,670	\$ 21,780	\$ 174,240
2.10	7' Station Fence w/ Barbed Wire & Grounding	1,350	LF	13.85	13.85	6.92	\$ 18,695	\$ 18,695	\$ 9,347	\$ 46,737
2.11	20' Slide Gate & Grounding	3	EA	8,100.00	3,245.00	1,305.00	\$ 24,300	\$ 9,735	\$ 3,915	\$ 37,950
2.12	4' Pedestrian gate	3	EA	2,500.00	1,000.00	350.00	\$ 7,500	\$ 3,000	\$ 1,050	\$ 11,550
2.13	Erosion Control-Silt fence install & remove	2,250	LF	2.41	3.16	0.72	\$ 5,423	\$ 7,110	\$ 1,620	\$ 14,153
2.14	Temporary fencing	1,500	LF	7.50	5.25	2.25	\$ 11,250	\$ 7,875	\$ 3,375	\$ 22,500
2.15	345kV, Cable sealing end - 3 Ph	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.16	345kV, lighting arrester	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.17	345kV, Cable sealing end - 3 Ph	18	EA	8,346.00	5,758.74	3,839.16	\$ 150,228	\$ 103,657	\$ 69,105	\$ 322,990
2.18	345kV, lighting arrester	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
2.19	AL. Bus Tubing, 5" SCH 80	630	LF	25.00	184.94	123.29	\$ 15,750	\$ 116,511	\$ 77,674	\$ 209,935
2.20	AL. Bus fittings	1	LS	12,600.00	12,600.00	6,300.00	\$ 12,600	\$ 12,600	\$ 6,300	\$ 31,500
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	400	LF	2.09	-	-	\$ 836	\$ -	\$ -	\$ 836

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000
2.23	Ground Rod, 3/4" x 15'	54	EA	135.00	67.50	7.50	\$ 7,290	\$ 3,645	\$ 405	\$ 11,340
2.24	Trench Box Shoring (Vault)	12	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 216,949	\$ 325,424	\$ 542,373
2.25	Splice Vault Excavation	7,765	CY		\$ 17.5	\$ 7.5	\$ -	\$ 135,893	\$ 58,240	\$ 194,133
2.26	Splice Vault Supply & Installation	12	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 546,000	\$ 257,400	\$ 600,600	\$ 1,404,000
2.27	Splice Vault Backfill	2,330	CY		\$ 14.0	\$ 6.0	\$ -	\$ 32,614	\$ 13,978	\$ 46,592
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	7,066	CY		\$ 24.5	\$ 10.5	\$ -	\$ 173,128	\$ 74,198	\$ 247,326
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	12	EA			\$ 4,000	\$ -	\$ -	\$ 48,000	\$ 48,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	7,765	CF		\$ 1.0	\$ 0.5	\$ -	\$ 7,765	\$ 3,883	\$ 11,648
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 1,367,680	\$ 1,706,372	\$ 1,640,135	\$ 4,714,187
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 172,117,008	\$ 151,555,924	\$ 101,214,425	\$ 424,887,357
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		4,248,873.57		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		16,995,494.27		\$ -	\$ 16,995,494	\$ -	\$ 16,995,494
3.4	Utility PM and Project Oversight	1	LS		4,248,873.57		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.5	Site Accommodation, Facilities, Storage	1	LS	4,248,873.57			\$ 4,248,874	\$ -	\$ -	\$ 4,248,874
	Engineering									
3.6	Design Engineering	1	LS		\$ 21,244,368		\$ -	\$ 21,244,368	\$ -	\$ 21,244,368
3.7	Surveying/Staking	1	LS		\$ 2,974,211		\$ -	\$ 2,974,211	\$ -	\$ 2,974,211
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 4,248,874		\$ -	\$ 4,248,874	\$ -	\$ 4,248,874
3.11	Environmental-special studies/investigation	1	LS		\$ 370,000		\$ -	\$ 370,000	\$ -	\$ 370,000
3.12	Warranties / LOC's	1	LS		\$ 1,274,662		\$ -	\$ 1,274,662	\$ -	\$ 1,274,662
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 868,559	\$ -	\$ -	\$ 868,559	\$ 868,559
3.15	Legal Fees (Real estate)	1.00	LS		-	26,056.77	\$ -	\$ -	\$ 26,057	\$ 26,057
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 172,117,008			\$ 15,146,297	\$ -	\$ -	\$ 15,146,297
3.21	Contractor Permits	1	LS		\$ 424,887		\$ -	\$ 424,887	\$ -	\$ 424,887
3.22	Payment & Performance Bond	1	LS			\$ 14,900,000	\$ -	\$ -	\$ 14,900,000	\$ 14,900,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 19,395,170	\$ 62,617,544	\$ 19,812,816	\$ 101,825,530

Comp 68. Northport to New Rochelle Landing 320kV DC Offshore Submarine Cables - One circuit
Northport-Sprain Brook 320KV DC

Total: \$ 528,901,092

New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each)EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables - Three circuits (three lines, single circuit each) EGC-Dunwoodie 345KV / EGC-Sprain Brook 345KV/ Ruland-Sprain Brook 345KV				
1. SUBMARINE CABLE	\$ 71,948,691	\$ 139,544,959	\$ 90,274,548	\$ 301,768,198
2. TRANSITION STATION	\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 9,363,374	\$ 47,125,551	\$ 14,772,680	\$ 71,261,605
SUBTOTAL (Costs):	\$ 81,418,065	\$ 186,843,391	\$ 105,256,264	\$ 373,517,721
CONTRACTOR MARK-UP (OH&P)	\$ 14,655,252	\$ 33,631,810	\$ 18,946,128	\$ 67,233,190
SUBTOTAL:	\$ 96,073,317	\$ 220,475,201	\$ 124,202,392	\$ 440,750,910
CONTINGENCY ON ENTIRE PROJECT	\$ 19,214,663	\$ 44,095,040	\$ 24,840,478	\$ 88,150,182
TOTAL:	\$ 115,287,981	\$ 264,570,242	\$ 149,042,870	\$ 528,901,092

Description of Work: Northport-New Rochelle landing. Part of Northport to Sprainbrook 320 kV DC project segment, 5000kCMIL, Cu, Single Core, XLPE, submarine cable (25.38 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 320kV DC, 5000kCMIL, Cu, Single Core, XLPE, Submarine	294,814	FT	\$ 212	\$ 400	\$ 250	\$ 62,500,585	\$ 117,925,632	\$ 73,703,520	\$ 254,129,737
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 14,921,613	\$ 9,947,742	\$ -	\$ 14,921,613	\$ 9,947,742	\$ 24,869,354
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.5	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	294,814	FT	\$ 7			\$ 2,180,740	\$ -	\$ -	\$ 2,180,740
1.8	Ground Continuity Conductor	294,814	FT	\$ 13			\$ 3,844,081	\$ -	\$ -	\$ 3,844,081
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	4,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 3,200,000	\$ 6,400,000	\$ 6,400,000	\$ 16,000,000
TOTAL - Submarine cable:							\$ 71,948,691	\$ 139,544,959	\$ 90,274,548	\$ 301,768,198
2. TRANSITION STATION										
2.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
2.4	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.8	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
2.9	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
2.10	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
2.11	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
2.12	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
2.13	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
2.14	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, lighting arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
2.18	345kV, lighting arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
2.19	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
2.20	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -

Comp										
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
2.22	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
2.23	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	863	CY		\$ 17.5	\$ 7.5	\$ -	\$ 15,099	\$ 6,471	\$ 21,570
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	259	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,624	\$ 1,553	\$ 5,177
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	785	CY		\$ 24.5	\$ 10.5	\$ -	\$ 19,236	\$ 8,244	\$ 27,481
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	863	CF		\$ 1.0	\$ 0.5	\$ -	\$ 863	\$ 431	\$ 1,294
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 106,000	\$ 172,881	\$ 209,037	\$ 487,918
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 72,054,691	\$ 139,717,840	\$ 90,483,585	\$ 302,256,116
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,022,561.16		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.3	Construction Project Management / Supervision	1	LS		12,090,244.64		\$ -	\$ 12,090,245	\$ -	\$ 12,090,245
3.4	Utility PM and Project Oversight	1	LS		3,022,561.16		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.5	Site Accommodation, Facilities, Storage	1	LS	3,022,561.16			\$ 3,022,561	\$ -	\$ -	\$ 3,022,561
	Engineering									
3.6	Design Engineering	1	LS		\$ 15,112,806		\$ -	\$ 15,112,806	\$ -	\$ 15,112,806
3.7	Surveying/Staking	1	LS		\$ 2,115,793		\$ -	\$ 2,115,793	\$ -	\$ 2,115,793
3.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	2	EA		\$ 80,000		\$ -	\$ 160,000	\$ -	\$ 160,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,022,561		\$ -	\$ 3,022,561	\$ -	\$ 3,022,561
3.11	Environmental-special studies/investigation	1	LS		\$ 870,000		\$ -	\$ 870,000	\$ -	\$ 870,000
3.12	Warranties / LOC's	1	LS		\$ 906,768		\$ -	\$ 906,768	\$ -	\$ 906,768
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 206,485	\$ -	\$ -	\$ 206,485	\$ 206,485
3.15	Legal Fees (Real estate)	1.00	LS		-	6,194.55	\$ -	\$ -	\$ 6,195	\$ 6,195
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 72,054,691			\$ 6,340,813	\$ -	\$ -	\$ 6,340,813
3.21	Contractor Permits	1	LS		\$ 302,256		\$ -	\$ 302,256	\$ -	\$ 302,256
3.22	Payment & Performance Bond	1	LS			\$ 10,560,000	\$ -	\$ -	\$ 10,560,000	\$ 10,560,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,363,374	\$ 47,125,551	\$ 14,772,680	\$ 71,261,605

NEXtera Energy- TO44 Enhanced 2

Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits

(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)

Total: \$ 385,634,343

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,553,664	\$ 12,590,558	\$ 5,026,706	\$ 20,170,928
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 32,756,973	\$ 23,529,781	\$ 14,478,636	\$ 70,765,391
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 63,187,504	\$ 38,177,910	\$ 24,731,740	\$ 126,097,154
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,916,970	\$ 33,123,408	\$ 11,266,787	\$ 55,307,165
SUBTOTAL (Costs):	\$ 109,415,111	\$ 107,421,657	\$ 55,503,869	\$ 272,340,638
CONTRACTOR MARK-UP (OH&P)	\$ 19,694,720	\$ 19,335,898	\$ 9,990,696	\$ 49,021,315
SUBTOTAL:	\$ 129,109,831	\$ 126,757,556	\$ 65,494,565	\$ 321,361,952
CONTINGENCY ON ENTIRE PROJECT	\$ 25,821,966	\$ 25,351,511	\$ 13,098,913	\$ 64,272,390
TOTAL:	\$ 154,931,797	\$ 152,109,067	\$ 78,593,479	\$ 385,634,343

Description of Work: East Garden City - Hempstead Harbor Landing (Shore Road, double circuits). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.21	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,147,000	\$ 3,063,000	\$ 10,210,000
1.3	Flaggers	330	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 528,000	\$ 1,584,000	\$ 528,000	\$ 2,640,000
1.4	K Rail / Lane Control / Metal Plates	53,909	LF	\$ 30	\$ 18	\$ 12	\$ 1,617,264	\$ 970,358	\$ 646,906	\$ 3,234,528
1.5	Police Support	13,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,584,000	\$ 356,400	\$ 1,940,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.21	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 408,400	\$ 1,225,200	\$ 408,400	\$ 2,042,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,553,664	\$ 12,590,558	\$ 5,026,706	\$ 20,170,928
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
EGC-SP & RL-DW -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	10.21	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,427,358	\$ 951,572	\$ 2,378,930
2.2	Formwork in Trench	431,270	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 862,541	\$ 646,906	\$ 215,635	\$ 1,725,082
2.3	Trench Excavation	67,885	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,187,990	\$ 509,139	\$ 1,697,129
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,243	CY	\$ 50	\$ 25	\$ 14	\$ 212,141	\$ 103,949	\$ 59,400	\$ 375,490
2.5	Supply & Install Thermal Backfill -conduit level	35,640	CY	\$ 350	\$ 245	\$ 105	\$ 12,473,897	\$ 8,731,728	\$ 3,742,169	\$ 24,947,795
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,604	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,320,782	\$ 2,075,489	\$ 830,196	\$ 6,226,466
2.8	Conduit 8" SCH 40PVC	431,270	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,334,333	\$ 2,445,303	\$ 1,047,987	\$ 15,827,624
2.9	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 2" SCH 40PVC	215,635	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 759,036	\$ 679,251	\$ 291,108	\$ 1,729,394
2.11	Warning Tape	53,909	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,086	\$ 13,477	\$ 5,391	\$ 26,954
2.12	Trench Box Shoring (Vault)	60	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,084,746	\$ 1,627,119	\$ 2,711,864
2.13	Splice Vault Excavation	9,973	CY		\$ 17.5	\$ 7.5	\$ -	\$ 174,533	\$ 74,800	\$ 249,333
2.14	Splice Vault Supply & Installation	60	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,100,000	\$ 990,000	\$ 2,310,000	\$ 5,400,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Backfill	2,992	CY		\$ 14.0	\$ 6.0	\$ -	\$ 41,888	\$ 17,952	\$ 59,840
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	646,906	LF			\$ 0.25	\$ -	\$ -	\$ 161,726	\$ 161,726
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	33,940	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 475,162	\$ 475,162	\$ 237,581	\$ 1,187,905
2.21	PVMT, AGGREGATE, 10", BASE COURSE	9,428	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 210,994	\$ 221,544	\$ 94,948	\$ 527,486
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	166	EA		\$ 400	\$ 1,200	\$ -	\$ 66,416	\$ 199,247	\$ 265,663
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	166	EA		\$ 10	\$ 15	\$ -	\$ 1,660	\$ 2,491	\$ 4,151
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	356	EA		\$ 400	\$ 1,200	\$ -	\$ 142,559	\$ 427,676	\$ 570,235
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 557,466	\$ 371,644	\$ -	\$ 557,466	\$ 371,644	\$ 929,110
2.24	Excess Materials Disposal to Certified Backfill	97,326	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,384,498	\$ 1,021,928	\$ 3,406,425
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	60	EA			\$ 4,000	\$ -	\$ -	\$ 240,000	\$ 240,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	77,858	CF		\$ 1.0	\$ 0.5	\$ -	\$ 77,858	\$ 38,929	\$ 116,788
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 32,756,973	\$ 23,529,781	\$ 14,478,636	\$ 70,765,391
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	169,813	FT	\$ 167	\$ 100	\$ 67	\$ 28,358,724	\$ 17,015,235	\$ 11,343,490	\$ 56,717,448
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	90	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,054,980	\$ 886,183	\$ 253,195	\$ 2,194,358
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	60	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,712,907	\$ 1,027,744	\$ 685,163	\$ 3,425,814
3.11	Fiber Optic Cable	113,208	FT	\$ 7	\$ 3	\$ 2	\$ 837,403	\$ 377,052	\$ 251,368	\$ 1,465,823
3.12	Ground Continuity Conductor	113,208	FT	\$ 13	\$ 8	\$ 5	\$ 1,476,125	\$ 852,120	\$ 568,080	\$ 2,896,326
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 63,187,504	\$ 38,177,910	\$ 24,731,740	\$ 126,097,154
Comp 3A - East Garden City To Hempstead Harbor Landing 345kV Onshore UG Cables -Double circuits(EGC To Sprain Brook 345 kV / EGC To Dunwoodie 345 kV)							\$ 98,498,141	\$ 74,298,250	\$ 44,237,082	\$ 217,033,473
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,556,060	\$ 2,370,707	\$ -	\$ 3,556,060	\$ 2,370,707	\$ 5,926,767
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,170,334.73		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		8,681,338.90		\$ -	\$ 8,681,339	\$ -	\$ 8,681,339
4.4	Utility PM and Project Oversight	1	LS		2,170,334.73		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.5	Site Accommodation, Facilities, Storage	1	LS	2,170,334.73			\$ 2,170,335	\$ -	\$ -	\$ 2,170,335
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,851,674	\$ -	\$ -	\$ 10,851,674	\$ -	\$ 10,851,674
4.7	LiDAR /GPR	1.0	LS		\$ 390,660	\$ 260,440	\$ -	\$ 390,660	\$ 260,440	\$ 651,100
4.8	Geotech	11.00	EA		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 911,541	\$ 607,694	\$ -	\$ 911,541	\$ 607,694	\$ 1,519,234
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,170,335		\$ -	\$ 2,170,335	\$ -	\$ 2,170,335
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 651,100		\$ -	\$ 651,100	\$ -	\$ 651,100
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 88,246	\$ -	\$ -	\$ 88,246	\$ 88,246
4.16	Legal Fees (Real estate)	1.00	LS		-	2,647.38	\$ -	\$ -	\$ 2,647	\$ 2,647
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,700,000	\$ -	\$ -	\$ 7,700,000	\$ 7,700,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 98,498,141.33			\$ 8,746,635	\$ -	\$ -	\$ 8,746,635
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 217,033	\$ -	\$ -	\$ 217,033	\$ 217,033
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,916,970	\$ 33,123,408	\$ 11,266,787	\$ 55,307,165

NEXtera Energy- TO44 Enhanced 2

Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit

(Ruland To Sprain Brook 345 kV)

Total: \$ 349,868,481

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274
SUBTOTAL (Costs):	\$ 90,427,881	\$ 103,561,178	\$ 53,093,201	\$ 247,082,261
CONTRACTOR MARK-UP (OH&P)	\$ 16,277,019	\$ 18,641,012	\$ 9,556,776	\$ 44,474,807
SUBTOTAL:	\$ 106,704,900	\$ 122,202,190	\$ 62,649,977	\$ 291,557,067
CONTINGENCY ON ENTIRE PROJECT	\$ 21,340,980	\$ 24,440,438	\$ 12,529,995	\$ 58,311,413
TOTAL:	\$ 128,045,880	\$ 146,642,628	\$ 75,179,973	\$ 349,868,481

Description of Work: Ruland - Hempstead Harbor Landing (Shore Road, single circuit). 5000 kcmil copper XLPE, single cable per phase..

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	15.89	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 11,120,200	\$ 4,765,800	\$ 15,886,000
1.3	Flaggers	500	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 800,000	\$ 2,400,000	\$ 800,000	\$ 4,000,000
1.4	K Rail / Lane Control / Metal Plates	83,878	LF	\$ 30	\$ 18	\$ 12	\$ 2,516,342	\$ 1,509,805	\$ 1,006,537	\$ 5,032,685
1.5	Police Support	20,000.0	HR		\$ 120	\$ 27	\$ -	\$ 2,400,000	\$ 540,000	\$ 2,940,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	15.89	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 635,440	\$ 1,906,320	\$ 635,440	\$ 3,177,200
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,951,782	\$ 19,416,325	\$ 7,771,777	\$ 31,139,885
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	15.89	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,220,863	\$ 1,480,575	\$ 3,701,438
2.2	Formwork in Trench	643,225	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,286,449	\$ 964,837	\$ 321,612	\$ 2,572,899
2.3	Trench Excavation	53,602	CY		\$ 17.5	\$ 7.5	\$ -	\$ 938,036	\$ 402,015	\$ 1,340,051
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,350	SF	\$ 50	\$ 25	\$ 14	\$ 167,506	\$ 82,078	\$ 46,902	\$ 296,486
2.5	Supply & Install Thermal Backfill	28,141	CY	\$ 350	\$ 245	\$ 105	\$ 9,849,377	\$ 6,894,564	\$ 2,954,813	\$ 19,698,755
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	13,101	CY	\$ 200	\$ 125	\$ 50	\$ 2,620,247	\$ 1,637,654	\$ 655,062	\$ 4,912,963
2.9	Conduit 8" SCH 40PVC	335,512	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 9,595,652	\$ 1,902,355	\$ 815,295	\$ 12,313,302
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	167,756	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 590,502	\$ 528,432	\$ 226,471	\$ 1,345,404
2.12	Warning Tape	167,756	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 25,163	\$ 41,939	\$ 16,776	\$ 83,878
2.13	Trench Box Shoring (Vault)	49	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 885,876	\$ 1,328,814	\$ 2,214,689
2.14	Splice Vault Excavation	8,145	CY		\$ 17.5	\$ 7.5	\$ -	\$ 142,536	\$ 61,087	\$ 203,622
2.15	Splice Vault Supply & Installation	49	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,715,000	\$ 808,500	\$ 1,886,500	\$ 4,410,000
2.16	Splice Vault Backfill	2,443	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,209	\$ 14,661	\$ 48,869

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	805	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 644,000	\$ 1,288,000	\$ 1,288,000	\$ 3,220,000
2.18	HDD along Route	1,200	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 960,000	\$ 1,920,000	\$ 1,920,000	\$ 4,800,000
2.19	Air Test Ducts	503,268	LF			\$ 0.25	\$ -	\$ -	\$ 125,817	\$ 125,817
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	31,071	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 434,989	\$ 434,989	\$ 217,495	\$ 1,087,473
2.21	PVMT, AGGREGATE, 10", BASE COURSE	8,631	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 193,156	\$ 202,814	\$ 86,920	\$ 482,890
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	131	EA		\$ 400	\$ 1,200	\$ -	\$ 52,405	\$ 157,215	\$ 209,620
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	131	EA		\$ 10	\$ 15	\$ -	\$ 1,310	\$ 1,965	\$ 3,275
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	281	EA		\$ 400	\$ 1,200	\$ -	\$ 112,564	\$ 337,693	\$ 450,257
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	77,095	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,888,816	\$ 809,492	\$ 2,698,308
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	49	EA			\$ 4,000	\$ -	\$ -	\$ 196,000	\$ 196,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	61,747	CF		\$ 1.0	\$ 0.5	\$ -	\$ 61,747	\$ 30,873	\$ 92,620
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 28,082,043	\$ 23,492,789	\$ 15,680,897	\$ 67,255,729
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	264,216	FT	\$ 167	\$ 100	\$ 67	\$ 44,124,064	\$ 26,474,438	\$ 17,649,626	\$ 88,248,128
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	147	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,723,134	\$ 1,447,433	\$ 413,552	\$ 3,584,119
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	49	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 1,398,874	\$ 839,324	\$ 559,550	\$ 2,797,748
3.11	Fiber Optic Cable	88,072	FT	\$ 7	\$ 3	\$ 2	\$ 651,468	\$ 293,333	\$ 195,555	\$ 1,140,356
3.12	Ground Continuity Conductor	88,072	FT	\$ 13	\$ 8	\$ 5	\$ 1,148,371	\$ 662,918	\$ 441,945	\$ 2,253,234
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 49,212,741	\$ 29,776,525	\$ 19,277,107	\$ 98,266,373
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 81,246,566	\$ 72,685,639	\$ 42,729,781	\$ 196,661,987
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,462,463	\$ 2,308,308	\$ -	\$ 3,462,463	\$ 2,308,308	\$ 5,770,771
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.3	Construction Project Management / Supervision	1	LS		7,866,479.47		\$ -	\$ 7,866,479	\$ -	\$ 7,866,479
4.4	Utility PM and Project Oversight	1	LS		1,966,619.87		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.5	Site Accommodation, Facilities, Storage	1	LS	1,966,619.87			\$ 1,966,620	\$ -	\$ -	\$ 1,966,620
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,833,099	\$ -	\$ -	\$ 9,833,099	\$ -	\$ 9,833,099
4.7	LIDAR /GPR	1.0	LS		\$ 353,992	\$ 235,994	\$ -	\$ 353,992	\$ 235,994	\$ 589,986
4.8	Geotech	16.00	EA		2,730.00	1,820.00	\$ -	\$ 43,680	\$ 29,120	\$ 72,800
4.9	Surveying/Staking	1	LS		\$ 825,980	\$ 550,654	\$ -	\$ 825,980	\$ 550,654	\$ 1,376,634
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,966,620		\$ -	\$ 1,966,620	\$ -	\$ 1,966,620
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 589,986		\$ -	\$ 589,986	\$ -	\$ 589,986
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 60,856	\$ -	\$ -	\$ 60,856	\$ 60,856
4.16	Legal Fees (Real estate)	1.00	LS		-	1,825.68	\$ -	\$ -	\$ 1,826	\$ 1,826
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,980,000	\$ -	\$ -	\$ 6,980,000	\$ 6,980,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 81,246,566.33			\$ 7,214,695	\$ -	\$ -	\$ 7,214,695
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 196,662	\$ -	\$ -	\$ 196,662	\$ 196,662
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,181,315	\$ 30,875,539	\$ 10,363,420	\$ 50,420,274

NEXtera Energy- TO44 Enhanced 2

Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits

Total: \$ 133,317,472

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576
SUBTOTAL (Costs):	\$ 49,266,748	\$ 29,557,148	\$ 15,326,861	\$ 94,150,757
CONTRACTOR MARK-UP (OH&P)	\$ 8,868,015	\$ 5,320,287	\$ 2,758,835	\$ 16,947,136
SUBTOTAL:	\$ 58,134,763	\$ 34,877,435	\$ 18,085,696	\$ 111,097,893
CONTINGENCY ON ENTIRE PROJECT	\$ 11,626,953	\$ 6,975,487	\$ 3,617,139	\$ 22,219,579
TOTAL:	\$ 69,761,715	\$ 41,852,922	\$ 21,702,835	\$ 133,317,472

Description of Work: Convert two existing 138kV circuits (462, 463) to 345kV with new cable; disconnect other two (465, 467). 5000 kcmil copper XLPE, single cable per phase.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 8C - Rebuild: East Garden City - Newbridge 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	4.87	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	25,714	LF				\$ -	\$ -	\$ -	\$ -
1.5	Police Support	2,400.0	HR		\$ 120	\$ 27	\$ -	\$ 288,000	\$ 64,800	\$ 352,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 96,000	\$ 616,000	\$ 172,800	\$ 884,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench	0	SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)	0	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	0	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal	0	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	0	EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	0	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	0	CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	80,998	FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ 8,115,984	\$ 5,410,656	\$ 27,053,279
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	42	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ 413,552	\$ 118,158	\$ 1,024,034
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ 13,526,639	\$ -	\$ -	\$ 13,526,639
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 492,324	\$ -	\$ -	\$ 492,324
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ -	\$ -	\$ 166,830
3.10	Link Box & MH racking	28	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 799,357	\$ 479,614	\$ 319,743	\$ 1,598,713
3.11	Fiber Optic Cable	53,999	FT	\$ 7	\$ 3	\$ 2	\$ 399,427	\$ 179,848	\$ 119,898	\$ 699,173
3.12	Ground Continuity Conductor	53,999	FT	\$ 13	\$ 8	\$ 5	\$ 704,087	\$ 406,447	\$ 270,965	\$ 1,381,499
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 44,460,251	\$ 18,243,138	\$ 11,801,992	\$ 74,505,381
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 44,556,251	\$ 18,859,138	\$ 11,974,792	\$ 75,390,181
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 925,018	\$ 616,679	\$ -	\$ 925,018	\$ 616,679	\$ 1,541,697
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.3	Construction Project Management / Supervision	1	LS		3,015,607.24		\$ -	\$ 3,015,607	\$ -	\$ 3,015,607
4.4	Utility PM and Project Oversight	1	LS		753,901.81		\$ -	\$ 753,902	\$ -	\$ 753,902
4.5	Site Accommodation, Facilities, Storage	1	LS	753,901.81			\$ 753,902	\$ -	\$ -	\$ 753,902
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,769,509	\$ -	\$ -	\$ 3,769,509	\$ -	\$ 3,769,509
4.7	LIDAR /GPR	-	LS		\$ 135,702	\$ 90,468	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	-	LS		\$ 316,639	\$ 211,093	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 753,902		\$ -	\$ 753,902	\$ -	\$ 753,902
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 226,171		\$ -	\$ 226,171	\$ -	\$ 226,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,660,000	\$ -	\$ -	\$ 2,660,000	\$ 2,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 44,556,251.01			\$ 3,956,595	\$ -	\$ -	\$ 3,956,595
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 75,390	\$ -	\$ -	\$ 75,390	\$ 75,390
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,710,497	\$ 10,698,010	\$ 3,352,069	\$ 18,760,576

NEXtera Energy- TO44 Enhanced 2

Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits

Total: \$ 394,231,294

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535
SUBTOTAL (Costs):	\$ 113,187,125	\$ 108,339,275	\$ 56,885,531	\$ 278,411,931
CONTRACTOR MARK-UP (OH&P)	\$ 20,373,682	\$ 19,501,069	\$ 10,239,396	\$ 50,114,148
SUBTOTAL:	\$ 133,560,807	\$ 127,840,344	\$ 67,124,927	\$ 328,526,078
CONTINGENCY ON ENTIRE PROJECT	\$ 26,712,161	\$ 25,568,069	\$ 13,424,985	\$ 65,705,216
TOTAL:	\$ 160,272,969	\$ 153,408,413	\$ 80,549,913	\$ 394,231,294

Description of Work: Replace two existing 138kv UG cable with three 345kv 5000 kcmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 10A - East Garden City To Valley Stream 345kV Onshore UG Cables -Triple circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	7.12	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,984,000	\$ 2,136,000	\$ 7,120,000
1.3	Flaggers	440	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 704,000	\$ 2,112,000	\$ 704,000	\$ 3,520,000
1.4	K Rail / Lane Control / Metal Plates	37,594	LF	\$ 30	\$ 18	\$ 12	\$ 1,127,808	\$ 676,685	\$ 451,123	\$ 2,255,616
1.5	Police Support	17,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,112,000	\$ 475,200	\$ 2,587,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	7.12	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 284,800	\$ 854,400	\$ 284,800	\$ 1,424,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,116,608	\$ 10,859,085	\$ 4,087,123	\$ 17,062,816
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	7.12	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 995,376	\$ 663,584	\$ 1,658,960
2.2	Formwork in Trench	292,109	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 584,218	\$ 438,163	\$ 146,054	\$ 1,168,435
2.3	Trench Excavation	45,980	CY		\$ 17.5	\$ 7.5	\$ -	\$ 804,652	\$ 344,851	\$ 1,149,502
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,874	SF	\$ 50	\$ 25	\$ 14	\$ 143,688	\$ 70,407	\$ 40,233	\$ 254,327
2.5	Supply & Install Thermal Backfill	18,105	CY	\$ 350	\$ 245	\$ 105	\$ 6,336,631	\$ 4,435,642	\$ 1,900,989	\$ 12,673,262
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,924	CY	\$ 200	\$ 125	\$ 50	\$ 2,984,784	\$ 1,865,490	\$ 746,196	\$ 5,596,470
2.9	Conduit 8" SCH 40PVC	451,123	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 12,902,124	\$ 2,557,869	\$ 1,096,229	\$ 16,556,221
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	300,749	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 1,058,636	\$ 947,359	\$ 406,011	\$ 2,412,005
2.12	Warning Tape	75,187	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 11,278	\$ 18,797	\$ 7,519	\$ 37,594
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	11,968	CY		\$ 17.5	\$ 7.5	\$ -	\$ 209,440	\$ 89,760	\$ 299,200
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	3,590	CY		\$ 14.0	\$ 6.0	\$ -	\$ 50,266	\$ 21,542	\$ 71,808
2.17	Jack and Bore along Route	360	LF	\$ 2,400	\$ 4,800	\$ 4,800	\$ 864,000	\$ 1,728,000	\$ 1,728,000	\$ 4,320,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	751,872	LF			\$ 0.25	\$ -	\$ -	\$ 187,968	\$ 187,968
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	24,292	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 340,082	\$ 340,082	\$ 170,041	\$ 850,206
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,748	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 151,013	\$ 158,563	\$ 67,956	\$ 377,532
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	149	EA		\$ 400	\$ 1,200	\$ -	\$ 59,696	\$ 179,087	\$ 238,783
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	149	EA		\$ 10	\$ 15	\$ -	\$ 1,492	\$ 2,239	\$ 3,731
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	181	EA		\$ 400	\$ 1,200	\$ -	\$ 72,419	\$ 217,256	\$ 289,675
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	70,665	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,731,292	\$ 741,982	\$ 2,473,275
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	57,948	CF		\$ 1.0	\$ 0.5	\$ -	\$ 57,948	\$ 28,974	\$ 86,922
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 27,896,453	\$ 19,480,913	\$ 14,097,858	\$ 61,475,224
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE	118,420	FT	\$ 167	\$ 100	\$ 67	\$ 19,776,113	\$ 11,865,668	\$ 7,910,445	\$ 39,552,227
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE	216	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 2,531,952	\$ 2,126,840	\$ 607,668	\$ 5,266,460
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.10	Link Box & MH racking	72	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 2,055,488	\$ 1,233,293	\$ 822,195	\$ 4,110,977
3.11	Fiber Optic Cable	118,420	FT	\$ 7	\$ 3	\$ 2	\$ 875,952	\$ 394,409	\$ 262,939	\$ 1,533,300
3.12	Ground Continuity Conductor	118,420	FT	\$ 13	\$ 8	\$ 5	\$ 1,544,076	\$ 891,346	\$ 594,231	\$ 3,029,653
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 71,900,202	\$ 44,673,808	\$ 27,284,346	\$ 143,858,356
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 101,913,263	\$ 75,013,806	\$ 45,469,327	\$ 222,396,395
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,614,494	\$ 2,409,663	\$ -	\$ 3,614,494	\$ 2,409,663	\$ 6,024,157
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.3	Construction Project Management / Supervision	1	LS		8,895,855.82		\$ -	\$ 8,895,856	\$ -	\$ 8,895,856
4.4	Utility PM and Project Oversight	1	LS		2,223,963.95		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.5	Site Accommodation, Facilities, Storage	1	LS	2,223,963.95			\$ 2,223,964	\$ -	\$ -	\$ 2,223,964
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 11,119,820	\$ -	\$ -	\$ 11,119,820	\$ -	\$ 11,119,820
4.7	LiDAR /GPR	1.0	LS		\$ 400,314	\$ 266,876	\$ -	\$ 400,314	\$ 266,876	\$ 667,189
4.8	Geotech	8.00	EA		2,730.00	1,820.00	\$ -	\$ 21,840	\$ 14,560	\$ 36,400
4.9	Surveying/Staking	1	LS		\$ 934,065	\$ 622,710	\$ -	\$ 934,065	\$ 622,710	\$ 1,556,775
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,223,964		\$ -	\$ 2,223,964	\$ -	\$ 2,223,964
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 667,189		\$ -	\$ 667,189	\$ -	\$ 667,189
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 7,880,000	\$ -	\$ -	\$ 7,880,000	\$ 7,880,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 101,913,262.97			\$ 9,049,898	\$ -	\$ -	\$ 9,049,898
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 222,396	\$ -	\$ -	\$ 222,396	\$ 222,396
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,273,862	\$ 33,325,469	\$ 11,416,205	\$ 56,015,535

NEXtera Energy- TO44 Enhanced 2

Comp 11 - Pilgram to Northport 138kV Onshore UG Cables -Single circuit

(Pilgram to Northport kV)

Total: \$ 165,653,108

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365
SUBTOTAL (Costs):	\$ 42,682,442	\$ 49,673,108	\$ 24,631,109	\$ 116,986,658
CONTRACTOR MARK-UP (OH&P)	\$ 7,682,840	\$ 8,941,159	\$ 4,433,600	\$ 21,057,599
SUBTOTAL:	\$ 50,365,281	\$ 58,614,267	\$ 29,064,708	\$ 138,044,257
CONTINGENCY ON ENTIRE PROJECT	\$ 10,073,056	\$ 11,722,853	\$ 5,812,942	\$ 27,608,851.40
TOTAL:	\$ 60,438,338	\$ 70,337,121	\$ 34,877,650	\$ 165,653,108

Description of Work: Ruland - 138kV (399/567/900 MVA) 5000 kcmil copper XLPE, single cable per phase (8.34 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.34	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,838,000	\$ 2,502,000	\$ 8,340,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	44,035	LF	\$ 30	\$ 18	\$ 12	\$ 1,321,056	\$ 792,634	\$ 528,422	\$ 2,642,112
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.34	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 333,600	\$ 1,000,800	\$ 333,600	\$ 1,668,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,070,656	\$ 10,187,434	\$ 4,078,822	\$ 16,336,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.34	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,165,932	\$ 777,288	\$ 1,943,220
2.2	Formwork in Trench	346,914	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 693,827	\$ 520,370	\$ 173,457	\$ 1,387,654
2.3	Trench Excavation	28,909	CY		\$ 17.5	\$ 7.5	\$ -	\$ 505,916	\$ 216,821	\$ 722,737
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,807	SF	\$ 50	\$ 25	\$ 14	\$ 90,342	\$ 44,268	\$ 25,296	\$ 159,905
2.5	Supply & Install Thermal Backfill	15,177	CY	\$ 350	\$ 245	\$ 105	\$ 5,312,115	\$ 3,718,480	\$ 1,593,634	\$ 10,624,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,066	CY	\$ 200	\$ 125	\$ 50	\$ 1,413,191	\$ 883,244	\$ 353,298	\$ 2,649,733
2.9	Conduit 8" SCH 40PVC	176,141	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 5,037,627	\$ 998,718	\$ 428,022	\$ 6,464,367
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	88,070	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 310,008	\$ 277,422	\$ 118,895	\$ 706,325
2.12	Warning Tape	88,070	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 13,211	\$ 22,018	\$ 8,807	\$ 44,035
2.13	Trench Box Shoring (Vault)	24	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 433,898	\$ 650,847	\$ 1,084,746
2.14	Splice Vault Excavation	3,285	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,493	\$ 24,640	\$ 82,133
2.15	Splice Vault Supply & Installation	24	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 840,000	\$ 396,000	\$ 924,000	\$ 2,160,000
2.16	Splice Vault Backfill	986	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,798	\$ 5,914	\$ 19,712

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	95	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 76,000	\$ 152,000	\$ 152,000	\$ 380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	264,211	LF			\$ 0.25	\$ -	\$ -	\$ 66,053	\$ 66,053
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,481	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 230,729	\$ 230,729	\$ 115,364	\$ 576,822
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,578	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 102,455	\$ 107,577	\$ 46,105	\$ 256,136
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,264	\$ 84,791	\$ 113,055
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	71	EA		\$ 10	\$ 15	\$ -	\$ 707	\$ 1,060	\$ 1,766
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,710	\$ 182,130	\$ 242,840
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	40,572	CY		\$ 24.5	\$ 10.5	\$ -	\$ 994,013	\$ 426,006	\$ 1,420,019
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	24	EA			\$ 4,000	\$ -	\$ -	\$ 96,000	\$ 96,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	32,195	CF		\$ 1.0	\$ 0.5	\$ -	\$ 32,195	\$ 16,097	\$ 48,292
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,119,503	\$ 11,092,018	\$ 6,785,369	\$ 31,996,890
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	138,711	FT	\$ 145	\$ 87	\$ 58	\$ 20,113,078	\$ 12,067,847	\$ 8,045,231	\$ 40,226,155
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	72	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 424,656	\$ 708,947	\$ 202,556	\$ 1,336,159
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	24	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 639,816	\$ 383,890	\$ 255,926	\$ 1,279,632
3.11	Fiber Optic Cable	46,237	FT	\$ 7	\$ 3	\$ 2	\$ 342,015	\$ 153,997	\$ 102,665	\$ 598,676
3.12	Ground Continuity Conductor	46,237	FT	\$ 13	\$ 8	\$ 5	\$ 602,884	\$ 348,026	\$ 232,017	\$ 1,182,926
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 22,156,432	\$ 13,721,784	\$ 8,855,275	\$ 44,733,491
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 38,346,592	\$ 35,001,236	\$ 19,719,466	\$ 93,067,293
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,641,621	\$ 1,094,414	\$ -	\$ 1,641,621	\$ 1,094,414	\$ 2,736,035
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.3	Construction Project Management / Supervision	1	LS		3,722,691.74		\$ -	\$ 3,722,692	\$ -	\$ 3,722,692
4.4	Utility PM and Project Oversight	1	LS		930,672.93		\$ -	\$ 930,673	\$ -	\$ 930,673
4.5	Site Accommodation, Facilities, Storage	1	LS	930,672.93			\$ 930,673	\$ -	\$ -	\$ 930,673
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,653,365	\$ -	\$ -	\$ 4,653,365	\$ -	\$ 4,653,365
4.7	LiDAR /GPR	1.0	LS		\$ 167,521	\$ 111,681	\$ -	\$ 167,521	\$ 111,681	\$ 279,202
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 390,883	\$ 260,588	\$ -	\$ 390,883	\$ 260,588	\$ 651,471
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 930,673		\$ -	\$ 930,673	\$ -	\$ 930,673
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 279,202		\$ -	\$ 279,202	\$ -	\$ 279,202
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 34,478	\$ -	\$ -	\$ 34,478	\$ 34,478
4.16	Legal Fees (Real estate)	1.00	LS		-	1,034.34	\$ -	\$ -	\$ 1,034	\$ 1,034
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,300,000	\$ -	\$ -	\$ 3,300,000	\$ 3,300,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 38,346,591.60			\$ 3,405,177	\$ -	\$ -	\$ 3,405,177
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 93,067	\$ -	\$ -	\$ 93,067	\$ 93,067
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,335,850	\$ 14,671,872	\$ 4,911,643	\$ 23,919,365

NEXtera Energy- TO44 Enhanced 2

Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13A - Syosset - Oakwood 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LiDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO44 Enhanced 2

Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit

Total: \$ 25,498,312

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883
SUBTOTAL (Costs):	\$ 7,441,054	\$ 7,088,720	\$ 3,477,509	\$ 18,007,283
CONTRACTOR MARK-UP (OH&P)	\$ 1,339,390	\$ 1,275,970	\$ 625,952	\$ 3,241,311
SUBTOTAL:	\$ 8,780,444	\$ 8,364,689	\$ 4,103,460	\$ 21,248,594
CONTINGENCY ON ENTIRE PROJECT	\$ 1,756,089	\$ 1,672,938	\$ 820,692	\$ 4,249,719
TOTAL:	\$ 10,536,533	\$ 10,037,627	\$ 4,924,152	\$ 25,498,312

Description of Work: Replace existing 2.6 miles of UG cable, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 13B - Syosset - Greenlawn 138 kV Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.60	Mile				\$ -	\$ -	\$ -	\$ -
1.3	Flaggers	40	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 64,000	\$ 192,000	\$ 64,000	\$ 320,000
1.4	K Rail / Lane Control / Metal Plates	0	LF	\$ 30	\$ 18	\$ 12	\$ -	\$ -	\$ -	\$ -
1.5	Police Support	1,600.0	HR		\$ 120	\$ 27	\$ -	\$ 192,000	\$ 43,200	\$ 235,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	-	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 64,000	\$ 424,000	\$ 119,200	\$ 607,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew		Miles		\$ 139,800	\$ 93,200	\$ -	\$ -	\$ -	\$ -
2.2	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
2.3	Trench Excavation		CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits		SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.5	Supply & Install Thermal Backfill		CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench		CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete		CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC		LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC		LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC		LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape		LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
2.13	Trench Box Shoring (Vault)		EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ -	\$ -	\$ -
2.14	Splice Vault Excavation	0	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.15	Splice Vault Supply & Installation	0	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ -	\$ -	\$ -	\$ -
2.16	Splice Vault Backfill	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	0	LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ 448,266	\$ 298,844	\$ -	\$ -	\$ -	\$ -
2.26	Excess Materials Disposal to Certified Backfill	0	CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.27	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering		EA			\$ 4,000	\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Water Treatment and Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal		LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management		CF		\$ 1.0	\$ 0.5	\$ -	\$ -	\$ -	\$ -
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ -	\$ -	\$ -	\$ -
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	41,184	FT	\$ 145	\$ 87	\$ 58	\$ 5,971,680	\$ 3,583,008	\$ 2,388,672	\$ 11,943,360
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	13,728	FT	\$ 7	\$ 3	\$ 2	\$ 101,546	\$ 45,722	\$ 30,482	\$ 177,750
3.12	Ground Continuity Conductor	13,728	FT	\$ 13	\$ 8	\$ 5	\$ 178,999	\$ 103,331	\$ 68,887	\$ 351,217
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,641,033	\$ 4,155,419	\$ 2,657,748	\$ 13,454,200
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 6,705,033	\$ 4,579,419	\$ 2,776,948	\$ 14,061,400
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 220,691	\$ 147,127	\$ -	\$ 220,691	\$ 147,127	\$ 367,818
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.3	Construction Project Management / Supervision	1	LS		562,456.00		\$ -	\$ 562,456	\$ -	\$ 562,456
4.4	Utility PM and Project Oversight	1	LS		140,614.00		\$ -	\$ 140,614	\$ -	\$ 140,614
4.5	Site Accommodation, Facilities, Storage	1	LS	140,614.00			\$ 140,614	\$ -	\$ -	\$ 140,614
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 703,070	\$ -	\$ -	\$ 703,070	\$ -	\$ 703,070
4.7	LIDAR /GPR	-	LS		\$ 25,311	\$ 16,874	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1	LS		\$ 59,058	\$ 39,372	\$ -	\$ 59,058	\$ 39,372	\$ 98,430
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 140,614		\$ -	\$ 140,614	\$ -	\$ 140,614
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 42,184		\$ -	\$ 42,184	\$ -	\$ 42,184
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 6,705,033.41			\$ 595,407	\$ -	\$ -	\$ 595,407
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 14,061	\$ -	\$ -	\$ 14,061	\$ 14,061
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 736,021	\$ 2,509,301	\$ 700,561	\$ 3,945,883

NEXtera Energy- TO37 Core 2

Comp 249 (MODIFY) - Jamaica To Farragut (Farragut-Metropolitan Ave) 345kV Onshore UG Cables -Single circuit

(EGC-Farragut 345kv)

Total: \$ 175,090,363

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 249 (MODIFY) - Jamaica To Farragut (Farragut-Metropolitan Ave) 345kV Onshore UG Cables -Single circuit(EGC-Farragut 345kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,009,024	\$ 9,860,974	\$ 3,953,250	\$ 15,823,248
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 13,915,374	\$ 11,236,538	\$ 7,114,741	\$ 32,266,653
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,120,998	\$ 15,199,959	\$ 9,840,725	\$ 50,161,682
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 4,627,347	\$ 15,415,210	\$ 5,357,247	\$ 25,399,804
SUBTOTAL (Costs):	\$ 45,672,744	\$ 51,712,681	\$ 26,265,962	\$ 123,651,387
CONTRACTOR MARK-UP (OH&P)	\$ 8,221,094	\$ 9,308,283	\$ 4,727,873	\$ 22,257,250
SUBTOTAL:	\$ 53,893,837	\$ 61,020,964	\$ 30,993,835	\$ 145,908,636
CONTINGENCY ON ENTIRE PROJECT	\$ 10,778,767	\$ 12,204,193	\$ 6,198,767	\$ 29,181,727
TOTAL:	\$ 64,672,605	\$ 73,225,157	\$ 37,192,602	\$ 175,090,363

Description of Work: Construct a new Farragut 345kv GIS substation and connect back to the existing Farragut 345kV, further interconnecting the Farragut East and West ring buses.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 249 (MODIFY) - Jamaica To Farragut (Farragut-Metropolitan Ave) 345kV Onshore UG Cables -Single circuit(EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.11	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,677,000	\$ 2,433,000	\$ 8,110,000
1.3	Flaggers	250	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 400,000	\$ 1,200,000	\$ 400,000	\$ 2,000,000
1.4	K Rail / Lane Control / Metal Plates	42,821	LF	\$ 30	\$ 18	\$ 12	\$ 1,284,624	\$ 770,774	\$ 513,850	\$ 2,569,248
1.5	Police Support	10,000.0	HR		\$ 120	\$ 27	\$ -	\$ 1,200,000	\$ 270,000	\$ 1,470,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.11	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 324,400	\$ 973,200	\$ 324,400	\$ 1,622,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,009,024	\$ 9,860,974	\$ 3,953,250	\$ 15,823,248
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.11	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,133,778	\$ 755,852	\$ 1,889,630
2.2	Formwork in Trench	333,806	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 667,613	\$ 500,710	\$ 166,903	\$ 1,335,226
2.3	Trench Excavation	27,817	CY		\$ 17.5	\$ 7.5	\$ -	\$ 486,801	\$ 208,629	\$ 695,430
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,739	SF	\$ 50	\$ 25	\$ 14	\$ 86,929	\$ 42,595	\$ 24,340	\$ 153,864
2.5	Supply & Install Thermal Backfill	14,604	CY	\$ 350	\$ 245	\$ 105	\$ 5,111,411	\$ 3,577,987	\$ 1,533,423	\$ 10,222,821
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,799	CY	\$ 200	\$ 125	\$ 50	\$ 1,359,797	\$ 849,873	\$ 339,949	\$ 2,549,620
2.9	Conduit 8" SCH 40PVC	171,283	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,898,700	\$ 971,176	\$ 416,218	\$ 6,286,093
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	85,642	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 301,458	\$ 269,771	\$ 115,616	\$ 686,846
2.12	Warning Tape	85,642	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 12,846	\$ 21,410	\$ 8,564	\$ 42,821
2.13	Trench Box Shoring (Vault)	25	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 451,977	\$ 677,966	\$ 1,129,944
2.14	Splice Vault Excavation	4,156	CY		\$ 17.5	\$ 7.5	\$ -	\$ 72,722	\$ 31,167	\$ 103,889
2.15	Splice Vault Supply & Installation	25	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 875,000	\$ 412,500	\$ 962,500	\$ 2,250,000
2.16	Splice Vault Backfill	1,247	CY		\$ 14.0	\$ 6.0	\$ -	\$ 17,453	\$ 7,480	\$ 24,933

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	345	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 276,000	\$ 552,000	\$ 552,000	\$ 1,380,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	256,925	LF			\$ 0.25	\$ -	\$ -	\$ 64,231	\$ 64,231
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	16,107	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 225,492	\$ 225,492	\$ 112,746	\$ 563,729
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,474	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 100,129	\$ 105,135	\$ 45,058	\$ 250,322
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	68	EA		\$ 400	\$ 1,200	\$ -	\$ 27,196	\$ 81,588	\$ 108,784
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	68	EA		\$ 10	\$ 15	\$ -	\$ 680	\$ 1,020	\$ 1,700
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	146	EA		\$ 400	\$ 1,200	\$ -	\$ 58,416	\$ 175,248	\$ 233,664
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	39,944	CY		\$ 24.5	\$ 10.5	\$ -	\$ 978,626	\$ 419,411	\$ 1,398,037
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	25	EA			\$ 4,000	\$ -	\$ -	\$ 100,000	\$ 100,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	31,973	CF		\$ 1.0	\$ 0.5	\$ -	\$ 31,973	\$ 15,986	\$ 47,959
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,915,374	\$ 11,236,538	\$ 7,114,741	\$ 32,266,653
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	134,886	FT	\$ 167	\$ 100	\$ 67	\$ 22,525,882	\$ 13,515,529	\$ 9,010,353	\$ 45,051,764
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	75	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 879,150	\$ 738,486	\$ 210,996	\$ 1,828,632
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	3	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 83,415	\$ 29,539	\$ 8,440	\$ 121,394
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	25	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 713,711	\$ 428,227	\$ 285,485	\$ 1,427,423
3.11	Fiber Optic Cable	44,962	FT	\$ 7	\$ 3	\$ 2	\$ 332,583	\$ 149,750	\$ 99,833	\$ 582,166
3.12	Ground Continuity Conductor	44,962	FT	\$ 13	\$ 8	\$ 5	\$ 586,257	\$ 338,428	\$ 225,619	\$ 1,150,304
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,120,998	\$ 15,199,959	\$ 9,840,725	\$ 50,161,682
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 41,045,396	\$ 36,297,472	\$ 20,908,715	\$ 98,251,583
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,716,186	\$ 1,144,124	\$ -	\$ 1,716,186	\$ 1,144,124	\$ 2,860,309
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		982,515.83		\$ -	\$ 982,516	\$ -	\$ 982,516
4.3	Construction Project Management / Supervision	1	LS		3,930,063.32		\$ -	\$ 3,930,063	\$ -	\$ 3,930,063
4.4	Utility PM and Project Oversight	1	LS		982,515.83		\$ -	\$ 982,516	\$ -	\$ 982,516
4.5	Site Accommodation, Facilities, Storage	1	LS	982,515.83			\$ 982,516	\$ -	\$ -	\$ 982,516
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 4,912,579	\$ -	\$ -	\$ 4,912,579	\$ -	\$ 4,912,579
4.7	LiDAR /GPR	1.0	LS		\$ 176,853	\$ 117,902	\$ -	\$ 176,853	\$ 117,902	\$ 294,755
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 412,657	\$ 275,104	\$ -	\$ 412,657	\$ 275,104	\$ 687,761
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 982,516		\$ -	\$ 982,516	\$ -	\$ 982,516
4.12	Environmental-special studies/investigation		LS		\$ -	-	\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 294,755		\$ -	\$ 294,755	\$ -	\$ 294,755
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 199,500	\$ -	\$ -	\$ 199,500	\$ 199,500
4.16	Legal Fees (Real estate)	1.00	LS		-	5,985.00	\$ -	\$ -	\$ 5,985	\$ 5,985
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,500,000	\$ -	\$ -	\$ 3,500,000	\$ 3,500,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 41,045,396.48			\$ 3,644,831	\$ -	\$ -	\$ 3,644,831
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 98,252	\$ -	\$ -	\$ 98,252	\$ 98,252
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,627,347	\$ 15,415,210	\$ 5,357,247	\$ 25,399,804

NEXtera Energy- TO44 Enhanced 2

Comp 207 (Modify)- Corona to Jamaica (Corona-Metropolitan Ave) 138kV Onshore UG Cables -Single circuit

(Corona to Jamaica 138kV)

Total: \$ 52,074,147

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 629,952	\$ 3,103,051	\$ 1,240,901	\$ 4,973,904
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 4,319,323	\$ 3,700,252	\$ 2,344,388	\$ 10,363,962
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,804,260	\$ 4,252,515	\$ 2,722,479	\$ 13,779,253
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,334,885	\$ 4,785,206	\$ 1,538,317	\$ 7,658,408
SUBTOTAL (Costs):	\$ 13,088,420	\$ 15,841,023	\$ 7,846,085	\$ 36,775,528
CONTRACTOR MARK-UP (OH&P)	\$ 2,355,916	\$ 2,851,384	\$ 1,412,295	\$ 6,619,595
SUBTOTAL:	\$ 15,444,335	\$ 18,692,408	\$ 9,258,380	\$ 43,395,123
CONTINGENCY ON ENTIRE PROJECT	\$ 3,088,867	\$ 3,738,482	\$ 1,851,676	\$ 8,679,025
TOTAL:	\$ 18,533,202	\$ 22,430,889	\$ 11,110,056	\$ 52,074,147

Description of Work: Ruland - 138kV (399/567/900 MVA) 5000 kcmil copper XLPE, single cable per phase (8.34 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 5 - Ruland To Hempstead Harbor Landing (Shore Road) 345kV Onshore UG Cables -Single circuit(Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.53	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,771,000	\$ 759,000	\$ 2,530,000
1.3	Flaggers	80	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 128,000	\$ 384,000	\$ 128,000	\$ 640,000
1.4	K Rail / Lane Control / Metal Plates	13,358	LF	\$ 30	\$ 18	\$ 12	\$ 400,752	\$ 240,451	\$ 160,301	\$ 801,504
1.5	Police Support	3,200.0	HR		\$ 120	\$ 27	\$ -	\$ 384,000	\$ 86,400	\$ 470,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	2.53	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 101,200	\$ 303,600	\$ 101,200	\$ 506,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 629,952	\$ 3,103,051	\$ 1,240,901	\$ 4,973,904
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	2.53	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 353,694	\$ 235,796	\$ 589,490
2.2	Formwork in Trench	105,139	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 210,278	\$ 157,709	\$ 52,570	\$ 420,557
2.3	Trench Excavation	8,762	CY		\$ 17.5	\$ 7.5	\$ -	\$ 153,328	\$ 65,712	\$ 219,040
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	548	SF	\$ 50	\$ 25	\$ 14	\$ 27,380	\$ 13,416	\$ 7,666	\$ 48,463
2.5	Supply & Install Thermal Backfill	4,600	CY	\$ 350	\$ 245	\$ 105	\$ 1,609,944	\$ 1,126,961	\$ 482,983	\$ 3,219,888
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	2,141	CY	\$ 200	\$ 125	\$ 50	\$ 428,296	\$ 267,685	\$ 107,074	\$ 803,055
2.9	Conduit 8" SCH 40PVC	53,434	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 1,528,201	\$ 302,969	\$ 129,844	\$ 1,961,013
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	26,717	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 94,043	\$ 84,158	\$ 36,068	\$ 214,269
2.12	Warning Tape	26,717	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 4,008	\$ 6,679	\$ 2,672	\$ 13,358
2.13	Trench Box Shoring (Vault)	9	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 162,712	\$ 244,068	\$ 406,780
2.14	Splice Vault Excavation	1,232	CY		\$ 17.5	\$ 7.5	\$ -	\$ 21,560	\$ 9,240	\$ 30,800
2.15	Splice Vault Supply & Installation	9	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 315,000	\$ 148,500	\$ 346,500	\$ 810,000
2.16	Splice Vault Backfill	370	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,174	\$ 2,218	\$ 7,392
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	80,150	LF			\$ 0.25	\$ -	\$ -	\$ 20,038	\$ 20,038
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	5,054	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 70,754	\$ 70,754	\$ 35,377	\$ 176,885
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,404	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 31,418	\$ 32,989	\$ 14,138	\$ 78,546
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	21	EA		\$ 400	\$ 1,200	\$ -	\$ 8,566	\$ 25,698	\$ 34,264
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	21	EA		\$ 10	\$ 15	\$ -	\$ 214	\$ 321	\$ 535
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	46	EA		\$ 400	\$ 1,200	\$ -	\$ 18,399	\$ 55,198	\$ 73,597
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	12,511	CY		\$ 24.5	\$ 10.5	\$ -	\$ 306,524	\$ 131,368	\$ 437,892
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	9	EA			\$ 4,000	\$ -	\$ -	\$ 36,000	\$ 36,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	9,994	CF		\$ 1.0	\$ 0.5	\$ -	\$ 9,994	\$ 4,997	\$ 14,990
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 4,319,323	\$ 3,700,252	\$ 2,344,388	\$ 10,363,962
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	42,079	FT	\$ 145	\$ 87	\$ 58	\$ 6,101,449	\$ 3,660,870	\$ 2,440,580	\$ 12,202,898
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	27	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 159,246	\$ 265,855	\$ 75,959	\$ 501,060
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 16,992	\$ 29,539	\$ 8,440	\$ 54,971
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	9	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 239,931	\$ 143,959	\$ 95,972	\$ 479,862
3.11	Fiber Optic Cable	14,026	FT	\$ 7	\$ 3	\$ 2	\$ 103,753	\$ 46,716	\$ 31,144	\$ 181,613
3.12	Ground Continuity Conductor	14,026	FT	\$ 13	\$ 8	\$ 5	\$ 182,889	\$ 105,576	\$ 70,384	\$ 358,849
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,804,260	\$ 4,252,515	\$ 2,722,479	\$ 13,779,253
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 11,753,535	\$ 11,055,817	\$ 6,307,767	\$ 29,117,119
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 520,908	\$ 347,272	\$ -	\$ 520,908	\$ 347,272	\$ 868,179
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		291,171.19		\$ -	\$ 291,171	\$ -	\$ 291,171
4.3	Construction Project Management / Supervision	1	LS		1,164,684.78		\$ -	\$ 1,164,685	\$ -	\$ 1,164,685
4.4	Utility PM and Project Oversight	1	LS		291,171.19		\$ -	\$ 291,171	\$ -	\$ 291,171
4.5	Site Accommodation, Facilities, Storage	1	LS	291,171.19			\$ 291,171	\$ -	\$ -	\$ 291,171
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,455,856	\$ -	\$ -	\$ 1,455,856	\$ -	\$ 1,455,856
4.7	LiDAR /GPR	1.0	LS		\$ 52,411	\$ 34,941	\$ -	\$ 52,411	\$ 34,941	\$ 87,351
4.8	Geotech	3.00	EA		2,730.00	1,820.00	\$ -	\$ 8,190	\$ 5,460	\$ 13,650
4.9	Surveying/Staking	1	LS		\$ 122,292	\$ 81,528	\$ -	\$ 122,292	\$ 81,528	\$ 203,820
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 291,171		\$ -	\$ 291,171	\$ -	\$ 291,171
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 87,351		\$ -	\$ 87,351	\$ -	\$ 87,351
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS			\$ -	\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,040,000	\$ -	\$ -	\$ 1,040,000	\$ 1,040,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 11,753,534.64			\$ 1,043,714	\$ -	\$ -	\$ 1,043,714
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 29,117	\$ -	\$ -	\$ 29,117	\$ 29,117
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,334,885	\$ 4,785,206	\$ 1,538,317	\$ 7,658,408

NEXtera Energy- TO37 Core 2

Comp 207&249 - Metropolitan Ave-JA 138 and 345kV Onshore UG Cables -Double circuits

(Corona-Jamaica 138kv & EGC-Farragut 345kv)

Total: \$ 106,195,369

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 207&249 - Metropolitan Ave-JA 138 and 345kV Onshore UG Cables -Double circuits(Corona-Jamaica 138kv & EGC-Farragut 345kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 757,440	\$ 3,799,864	\$ 1,483,176	\$ 6,040,480
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 9,189,504	\$ 7,089,504	\$ 4,447,103	\$ 20,726,110
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 16,407,575	\$ 10,046,444	\$ 6,495,073	\$ 32,949,092
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,937,438	\$ 9,252,348	\$ 3,091,262	\$ 15,281,048
SUBTOTAL (Costs):	\$ 29,291,957	\$ 30,188,159	\$ 15,516,613	\$ 74,996,730
CONTRACTOR MARK-UP (OH&P)	\$ 5,272,552	\$ 5,433,869	\$ 2,792,990	\$ 13,499,411
SUBTOTAL:	\$ 34,564,510	\$ 35,622,028	\$ 18,309,604	\$ 88,496,141
CONTINGENCY ON ENTIRE PROJECT	\$ 6,912,902	\$ 7,124,406	\$ 3,661,921	\$ 17,699,228
TOTAL:	\$ 41,477,412	\$ 42,746,433	\$ 21,971,524	\$ 106,195,369

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 207&249 - Metropolitan Ave-JA 138 and 345kV Onshore UG Cables -Double circuits(Corona-Jamaica 138kv & EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.85	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,995,000	\$ 855,000	\$ 2,850,000
1.3	Flaggers	120	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 192,000	\$ 576,000	\$ 192,000	\$ 960,000
1.4	K Rail / Lane Control / Metal Plates	15,048	LF	\$ 30	\$ 18	\$ 12	\$ 451,440	\$ 270,864	\$ 180,576	\$ 902,880
1.5	Police Support	4,800.0	HR		\$ 120	\$ 27	\$ -	\$ 576,000	\$ 129,600	\$ 705,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	2.85	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 114,000	\$ 342,000	\$ 114,000	\$ 570,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 757,440	\$ 3,799,864	\$ 1,483,176	\$ 6,040,480
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	3	Mile		\$ 139,800	\$ 93,200	\$ -	\$ 398,430	\$ 265,620	\$ 664,050
2.2	Formwork in Trench	120,384	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 240,768	\$ 180,576	\$ 60,192	\$ 481,536
Double Circuit Conduit Trench (EGC-JA 138KV & EGC-New Farragut 345kV)										
2.3	Trench Excavation	18,949	CY		\$ 17.5	\$ 7.5	\$ -	\$ 331,613	\$ 142,120	\$ 473,733
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,184	SF	\$ 50	\$ 25	\$ 14	\$ 59,217	\$ 29,016	\$ 16,581	\$ 104,814
2.5	Supply & Install Thermal Backfill	9,948	CY	\$ 350	\$ 245	\$ 105	\$ 3,481,940	\$ 2,437,358	\$ 1,044,582	\$ 6,963,880
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	4,635	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 926,957	\$ 579,348	\$ 231,739	\$ 1,738,044
2.9	Conduit 8" SCH 40PVC	120,384	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 3,442,982	\$ 682,577	\$ 292,533	\$ 4,418,093
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	60,192	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 211,876	\$ 189,605	\$ 81,259	\$ 482,740
2.12	Warning Tape	30,096	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 4,514	\$ 7,524	\$ 3,010	\$ 15,048
Single Circuit Conduit Trench										
2.13	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.14	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -
2.15	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.16	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.17	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.18	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.19	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.20	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.21	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.22	Warning Tape	0	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ -	\$ -	\$ -	\$ -
138 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	9	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 162,712	\$ 244,068	\$ 406,780
2.13	Splice Vault Excavation	1,232	CY		\$ 17.5	\$ 7.5	\$ -	\$ 21,560	\$ 9,240	\$ 30,800
2.14	Splice Vault Supply & Installation	9	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 315,000	\$ 148,500	\$ 346,500	\$ 810,000
2.15	Splice Vault Backfill	370	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,174	\$ 2,218	\$ 7,392
345 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	9	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 162,712	\$ 244,068	\$ 406,780
2.13	Splice Vault Excavation	1,496	CY		\$ 17.5	\$ 7.5	\$ -	\$ 26,180	\$ 11,220	\$ 37,400
2.14	Splice Vault Supply & Installation	9	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 315,000	\$ 148,500	\$ 346,500	\$ 810,000
2.15	Splice Vault Backfill	449	CY		\$ 14.0	\$ 6.0	\$ -	\$ 6,283	\$ 2,693	\$ 8,976
2.16	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	180,576	LF			\$ 0.25	\$ -	\$ -	\$ 45,144	\$ 45,144
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	9,460	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 132,440	\$ 132,440	\$ 66,220	\$ 331,100
2.21	PVMT, AGGREGATE, 10", BASE COURSE	2,628	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 58,810	\$ 61,750	\$ 26,464	\$ 147,024
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	46	EA		\$ 400	\$ 1,200	\$ -	\$ 18,539	\$ 55,617	\$ 74,157
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	46	EA		\$ 10	\$ 15	\$ -	\$ 463	\$ 695	\$ 1,159
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	99	EA		\$ 400	\$ 1,200	\$ -	\$ 39,794	\$ 119,381	\$ 159,174
2.23	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 632,814	\$ 421,876	\$ -	\$ 632,814	\$ 421,876	\$ 1,054,690
2.24	Excess Materials Disposal to Certified Backfill	27,117	CY		\$ 24.5	\$ 10.5	\$ -	\$ 664,357	\$ 284,724	\$ 949,081
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	18	EA			\$ 4,000	\$ -	\$ -	\$ 72,000	\$ 72,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	21,677	CF		\$ 1.0	\$ 0.5	\$ -	\$ 21,677	\$ 10,839	\$ 32,516
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 9,189,504	\$ 7,089,504	\$ 4,447,103	\$ 20,726,110
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE (Corona-JA 138KV)	47,401	FT	\$ 145	\$ 87	\$ 58	\$ 6,873,174	\$ 4,123,904	\$ 2,749,270	\$ 13,746,348
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	27	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 159,246	\$ 265,855	\$ 75,959	\$ 501,060
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	-	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE (Farragut-EGC 345KV)	47,401	FT	\$ 167	\$ 100	\$ 67	\$ 7,916,000	\$ 4,749,600	\$ 3,166,400	\$ 15,832,001
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	27	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 316,494	\$ 265,855	\$ 75,959	\$ 658,308
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	-	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking (138kv)	9	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 239,931	\$ 143,959	\$ 95,972	\$ 479,862
3.10	Link Box & MH racking (345kv)	9	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 256,936	\$ 154,162	\$ 102,774	\$ 513,872
3.10	Fiber Optic Cable	31,601	FT	\$ 7	\$ 3	\$ 2	\$ 233,751	\$ 105,250	\$ 70,166	\$ 409,167
3.11	Ground Continuity Conductor	31,601	FT	\$ 13	\$ 8	\$ 5	\$ 412,043	\$ 237,859	\$ 158,573	\$ 808,475
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 16,407,575	\$ 10,046,444	\$ 6,495,073	\$ 32,949,092
Comp 207&249 - Metropolitan Ave-JA 138 and 345kv Onshore UG Cables -Double circuits(Corona-Jamaica 138kv & EGC-Farragut 345kv)							\$ 26,354,519	\$ 20,935,811	\$ 12,425,352	\$ 59,715,682
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,000,835	\$ 667,223	\$ -	\$ 1,000,835	\$ 667,223	\$ 1,668,058
Project Management, Material Handling & Amenities										
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		597,156.82		\$ -	\$ 597,157	\$ -	\$ 597,157
4.3	Construction Project Management / Supervision	1	LS		2,388,627.28		\$ -	\$ 2,388,627	\$ -	\$ 2,388,627
4.4	Utility PM and Project Oversight	1	LS		597,156.82		\$ -	\$ 597,157	\$ -	\$ 597,157
4.5	Site Accommodation, Facilities, Storage	1	LS	597,156.82			\$ 597,157	\$ -	\$ -	\$ 597,157
Engineering										
4.6	Design Engineering	1.0	LS		\$ 2,985,784	\$ -	\$ -	\$ 2,985,784	\$ -	\$ 2,985,784

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.7	LIDAR /GPR	1.0	LS		\$ 107,488	\$ 71,659	\$ -	\$ 107,488	\$ 71,659	\$ 179,147
4.8	Geotech	3.00	EA		2,730.00	1,820.00	\$ -	\$ 8,190	\$ 5,460	\$ 13,650
4.9	Surveying/Staking	1	LS		\$ 250,806	\$ 167,204	\$ -	\$ 250,806	\$ 167,204	\$ 418,010
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 597,157		\$ -	\$ 597,157	\$ -	\$ 597,157
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 179,147		\$ -	\$ 179,147	\$ -	\$ 179,147
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,120,000	\$ -	\$ -	\$ 2,120,000	\$ 2,120,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 26,354,519.17			\$ 2,340,281	\$ -	\$ -	\$ 2,340,281
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 59,716	\$ -	\$ -	\$ 59,716	\$ 59,716
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,937,438	\$ 9,252,348	\$ 3,091,262	\$ 15,281,048

<p align="center"> <u>NEXtera Energy- TO37 Core 2</u> <u>Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double circuits</u> <u>(Corona-Jamaica 138kV& EGC-Jamaica 138kv & EGC-Farragut 345kv)</u> </p>	
Total:	\$ 420,295,497

Total: \$ 420,295,497

NEXtera Energy- TO37 Core 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double circuits(Corona-Jamaica 138kV& EGC-Jamaica 138kv & EGC-Farragut 345kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,843,456	\$ 13,949,314	\$ 5,610,142	\$ 22,402,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 36,795,571	\$ 26,811,768	\$ 17,122,283	\$ 80,729,622
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 66,533,097	\$ 40,778,716	\$ 26,326,822	\$ 133,638,635
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,795,796	\$ 36,034,212	\$ 12,217,677	\$ 60,047,685
SUBTOTAL (Costs):	\$ 117,967,919	\$ 117,574,010	\$ 61,276,924	\$ 296,818,854
CONTRACTOR MARK-UP (OH&P)	\$ 21,234,225	\$ 21,163,322	\$ 11,029,846	\$ 53,427,394
SUBTOTAL:	\$ 139,202,145	\$ 138,737,332	\$ 72,306,771	\$ 350,246,247
CONTINGENCY ON ENTIRE PROJECT	\$ 27,840,429	\$ 27,747,466	\$ 14,461,354	\$ 70,049,249
TOTAL:	\$ 167,042,574	\$ 166,484,798	\$ 86,768,125	\$ 420,295,497

Description of Work: Jamaica to East Garden City. 5000 kcmil copper XLPE (300/400/500 MVA), single cable per phase. (Double circuit for 138 and 345kv -11.08 miles and Single circuit for 138kv -0.51 miles)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 247 - Jamaica to East Garden City 138 and 345kv Onshore UG Cables -Double circuits(Corona-Jamaica 138kv& EGC-Jamaica 138kv & EGC-Farragut 345kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.59	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,113,000	\$ 3,477,000	\$ 11,590,000
1.3	Flaggers	340	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 544,000	\$ 1,632,000	\$ 544,000	\$ 2,720,000
1.4	K Rail / Lane Control / Metal Plates	61,195	LF	\$ 30	\$ 18	\$ 12	\$ 1,835,856	\$ 1,101,514	\$ 734,342	\$ 3,671,712
1.5	Police Support	13,600.0	HR		\$ 120	\$ 27	\$ -	\$ 1,632,000	\$ 367,200	\$ 1,999,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.59	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 463,600	\$ 1,390,800	\$ 463,600	\$ 2,318,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,843,456	\$ 13,949,314	\$ 5,610,142	\$ 22,402,912
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	12	Mile		\$ 139,800	\$ 93,200	\$ -	\$ 1,620,282	\$ 1,080,188	\$ 2,700,470
2.2	Formwork in Trench	466,058	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 932,115	\$ 699,086	\$ 233,029	\$ 1,864,230
Double Circuit Conduit Trench (EGC-JA 138KV & EGC-New Farragut 345kv)										
2.3	Trench Excavation	73,361	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,283,816	\$ 550,207	\$ 1,834,023
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,585	SF	\$ 50	\$ 25	\$ 14	\$ 229,253	\$ 112,334	\$ 64,191	\$ 405,778
2.5	Supply & Install Thermal Backfill	38,514	CY	\$ 350	\$ 245	\$ 105	\$ 13,480,069	\$ 9,436,048	\$ 4,044,021	\$ 26,960,138
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	17,943	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,588,644	\$ 2,242,902	\$ 897,161	\$ 6,728,707
2.9	Conduit 8" SCH 40PVC	489,562	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 14,001,462	\$ 2,775,814	\$ 1,189,635	\$ 17,966,911
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	244,781	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 861,628	\$ 771,060	\$ 330,454	\$ 1,963,142
2.12	Warning Tape	122,390	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,359	\$ 30,598	\$ 12,239	\$ 61,195
Double Circuit Conduit Trench (EGC-JA 138KV & Corona-JA 138kv)										
2.3	Trench Excavation	-	CY		\$ 17.5	\$ 7.5	\$ -	\$ -	\$ -	\$ -
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	0	SF	\$ 50	\$ 25	\$ 14	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.5	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	0	CY	\$ 200	\$ 125.0	\$ 50.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" SCH 40PVC	0	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ -	\$ -	\$ -	\$ -
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	0	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
2.12	Warning Tape	146,722	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 22,008	\$ 36,680	\$ 14,672	\$ 73,361
138 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	37	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 668,927	\$ 1,003,390	\$ 1,672,316
2.13	Splice Vault Excavation	5,065	CY		\$ 17.5	\$ 7.5	\$ -	\$ 88,636	\$ 37,987	\$ 126,622
2.14	Splice Vault Supply & Installation	37	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,295,000	\$ 610,500	\$ 1,424,500	\$ 3,330,000
2.15	Splice Vault Backfill	1,519	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,273	\$ 9,117	\$ 30,389
345 KV Splice Vault										
2.12	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.13	Splice Vault Excavation	5,818	CY		\$ 17.5	\$ 7.5	\$ -	\$ 101,811	\$ 43,633	\$ 145,444
2.14	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.15	Splice Vault Backfill	1,745	CY		\$ 14.0	\$ 6.0	\$ -	\$ 24,435	\$ 10,472	\$ 34,907
2.16	Jack and Bore along Route	250	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 400,000	\$ 800,000	\$ 800,000	\$ 2,000,000
2.17	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	734,342	LF			\$ 0.25	\$ -	\$ -	\$ 183,586	\$ 183,586
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	36,704	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 513,856	\$ 513,856	\$ 256,928	\$ 1,284,641
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,196	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 228,177	\$ 239,586	\$ 102,680	\$ 570,442
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	179	EA		\$ 400	\$ 1,200	\$ -	\$ 71,773	\$ 215,319	\$ 287,091
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	179	EA		\$ 10	\$ 15	\$ -	\$ 1,794	\$ 2,691	\$ 4,486
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	385	EA		\$ 400	\$ 1,200	\$ -	\$ 154,058	\$ 462,174	\$ 616,232
2.23	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 632,814	\$ 421,876	\$ -	\$ 632,814	\$ 421,876	\$ 1,054,690
2.24	Excess Materials Disposal to Certified Backfill	105,272	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,579,174	\$ 1,105,360	\$ 3,684,535
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	84,244	CF		\$ 1.0	\$ 0.5	\$ -	\$ 84,244	\$ 42,122	\$ 126,365
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 36,795,571	\$ 26,811,768	\$ 17,122,283	\$ 80,729,622
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE (JA-EGC 138KV)	192,765	FT	\$ 145	\$ 87	\$ 58	\$ 27,950,908	\$ 16,770,545	\$ 11,180,363	\$ 55,901,815
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	111	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 654,678	\$ 1,092,959	\$ 312,274	\$ 2,059,911
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE (Farragut-EGC 345KV)	184,297	FT	\$ 167	\$ 100	\$ 67	\$ 30,777,607	\$ 18,466,564	\$ 12,311,043	\$ 61,555,215
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE	105	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 1,230,810	\$ 1,033,880	\$ 295,394	\$ 2,560,085
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE	3	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 83,415	\$ 29,539	\$ 8,440	\$ 121,394
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE (Corona-JA 138kv)	8,064	FT	\$ 145	\$ 87	\$ 58	\$ 1,169,280	\$ 701,568	\$ 467,712	\$ 2,338,560
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE	1	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 5,664	\$ 9,846	\$ 2,813	\$ 18,324
3.10	Link Box & MH racking (138kv)	37	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 986,383	\$ 591,830	\$ 394,553	\$ 1,972,766
3.10	Link Box & MH racking (345kv)	35	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 999,196	\$ 599,517	\$ 399,678	\$ 1,998,392
3.10	Fiber Optic Cable	128,375	FT	\$ 7	\$ 3	\$ 2	\$ 949,592	\$ 427,567	\$ 285,045	\$ 1,662,204
3.11	Ground Continuity Conductor	128,375	FT	\$ 13	\$ 8	\$ 5	\$ 1,673,886	\$ 966,281	\$ 644,187	\$ 3,284,354
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 66,533,097	\$ 40,778,716	\$ 26,326,822	\$ 133,638,635
Comp 247 - Jamaica to East Garden City 138 and 345kV Onshore UG Cables -Double circuits(Corona-Jamaica 138kV& EGC-Jamaica 138kv & EGC-F							\$ 106,172,123	\$ 81,539,798	\$ 49,059,247	\$ 236,771,169
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,917,971	\$ 2,611,981	\$ -	\$ 3,917,971	\$ 2,611,981	\$ 6,529,952
Project Management, Material Handling & Amenities										
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,367,711.69		\$ -	\$ 2,367,712	\$ -	\$ 2,367,712
4.3	Construction Project Management / Supervision	1	LS		9,470,846.74		\$ -	\$ 9,470,847	\$ -	\$ 9,470,847
4.4	Utility PM and Project Oversight	1	LS		2,367,711.69		\$ -	\$ 2,367,712	\$ -	\$ 2,367,712
4.5	Site Accommodation, Facilities, Storage	1	LS	2,367,711.69			\$ 2,367,712	\$ -	\$ -	\$ 2,367,712
Engineering										
4.6	Design Engineering	1.0	LS		\$ 11,838,558	\$ -	\$ -	\$ 11,838,558	\$ -	\$ 11,838,558

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.7	LiDAR /GPR	1.0	LS		\$ 426,188	\$ 284,125	\$ -	\$ 426,188	\$ 284,125	\$ 710,314
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 994,439	\$ 662,959	\$ -	\$ 994,439	\$ 662,959	\$ 1,657,398
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,367,712		\$ -	\$ 2,367,712	\$ -	\$ 2,367,712
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 710,314		\$ -	\$ 710,314	\$ -	\$ 710,314
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 8,400,000	\$ -	\$ -	\$ 8,400,000	\$ 8,400,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 106,172,123.12			\$ 9,428,085	\$ -	\$ -	\$ 9,428,085
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 236,771	\$ -	\$ -	\$ 236,771	\$ 236,771
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,795,796	\$ 36,034,212	\$ 12,217,677	\$ 60,047,685

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	6,336	LF			\$ 0.25	\$ -	\$ -	\$ 1,584	\$ 1,584
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	407	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 5,696	\$ 5,696	\$ 2,848	\$ 14,241
2.21	PVMT, AGGREGATE, 10", BASE COURSE	113	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 2,529	\$ 2,656	\$ 1,138	\$ 6,324
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	2	EA		\$ 400	\$ 1,200	\$ -	\$ 673	\$ 2,018	\$ 2,691
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	2	EA		\$ 10	\$ 15	\$ -	\$ 17	\$ 25	\$ 42
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	4	EA		\$ 400	\$ 1,200	\$ -	\$ 1,445	\$ 4,334	\$ 5,779
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	1,019	CY		\$ 24.5	\$ 10.5	\$ -	\$ 24,965	\$ 10,699	\$ 35,664
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	1	EA			\$ 4,000	\$ -	\$ -	\$ 4,000	\$ 4,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	825	CF		\$ 1.0	\$ 0.5	\$ -	\$ 825	\$ 412	\$ 1,237
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 350,497	\$ 277,908	\$ 192,142	\$ 820,547
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	3,326	FT	\$ 125	\$ 75	\$ 50	\$ 415,800	\$ 249,480	\$ 166,320	\$ 831,600
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	3	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 17,694	\$ 29,539	\$ 8,440	\$ 55,673
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 125	\$ 75	\$ 50	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	1	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 26,659	\$ 15,995	\$ 10,664	\$ 53,318
3.11	Fiber Optic Cable	1,109	FT	\$ 7	\$ 3	\$ 2	\$ 8,202	\$ 3,693	\$ 2,462	\$ 14,357
3.12	Ground Continuity Conductor	1,109	FT	\$ 13	\$ 8	\$ 5	\$ 14,458	\$ 8,346	\$ 5,564	\$ 28,368
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 516,796	\$ 366,133	\$ 210,329	\$ 1,093,258
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 970,974	\$ 1,111,049	\$ 542,343	\$ 2,624,365
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 49,602	\$ 33,068	\$ -	\$ 49,602	\$ 33,068	\$ 82,670
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.3	Construction Project Management / Supervision	1	LS		104,974.61		\$ -	\$ 104,975	\$ -	\$ 104,975
4.4	Utility PM and Project Oversight	1	LS		26,243.65		\$ -	\$ 26,244	\$ -	\$ 26,244
4.5	Site Accommodation, Facilities, Storage	1	LS	26,243.65			\$ 26,244	\$ -	\$ -	\$ 26,244
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 131,218	\$ -	\$ -	\$ 131,218	\$ -	\$ 131,218
4.7	LiDAR /GPR	1.0	LS		\$ 4,724	\$ 3,149	\$ -	\$ 4,724	\$ 3,149	\$ 7,873
4.8	Geotech	1.00	EA		2,730	1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 11,022	\$ 7,348	\$ -	\$ 11,022	\$ 7,348	\$ 18,371
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 26,244		\$ -	\$ 26,244	\$ -	\$ 26,244
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 7,873		\$ -	\$ 7,873	\$ -	\$ 7,873
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS				\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 106,000	\$ -	\$ -	\$ 106,000	\$ 106,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 970,973.55			\$ 86,222	\$ -	\$ -	\$ 86,222
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 2,624	\$ -	\$ -	\$ 2,624	\$ 2,624
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 112,466	\$ 890,875	\$ 154,010	\$ 1,157,351

<u>NEXtera Energy- TO44 Enhanced 2</u>	
<u>Other Comp. 138kV Upgrades</u>	
Total:	\$ 15,958,202

		<u>Other Comp. 138kV Upgrades</u>	
	Total:	\$	15,958,202

	Total: \$	15,958,202
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Other Comp. 138kV Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Comp. 138kV Upgrades				
	\$ -	\$ -	\$ -	\$ -
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 421,872	\$ 2,676,720	\$ 416,325	\$ 3,514,917
CONTRACTOR MARK-UP (OH&P)	\$ 773,887	\$ 830,785	\$ 423,914	\$ 2,028,585
SUBTOTAL:	\$ 5,073,259	\$ 5,446,255	\$ 2,778,989	\$ 13,298,502
CONTINGENCY ON ENTIRE PROJECT	\$ 1,014,652	\$ 1,089,251	\$ 555,798	\$ 2,659,700
TOTAL:	\$ 6,087,911	\$ 6,535,506	\$ 3,334,786	\$ 15,958,202

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Comp. 138kV Upgrades										
1.1	CT Replacement		EA	\$ 18,000	\$ 7,970	\$ 3,416	\$ -	\$ -	\$ -	\$ -
1.2	CT Replacement-foundation		CY	\$ 704	\$ 804	\$ 503	\$ -	\$ -	\$ -	\$ -
1.3	CT Replacement-structure		EA	\$ 1,684	\$ 1,178	\$ 505	\$ -	\$ -	\$ -	\$ -
							\$ -		\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
2. Newbridge to Ruland 138kV (561Line OH reconductor)- Comp 97										
2.1	138kV Line Upgrade	7.600	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (561Line OH reconductor) :							\$ 1,900,000	\$ 950,000	\$ 950,000	\$ 3,800,000
3. Newbridge to Ruland 138kV (562Line OH reconductor)-Comp 98										
3.1	138kV Line Upgrade	7.910	MI	\$ 250,000	\$ 125,000	\$ 125,000	\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
TOTAL - Newbridge to Ruland 138kV (562Line OH reconductor) :							\$ 1,977,500	\$ 988,750	\$ 988,750	\$ 3,955,000
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 3,877,500.00	\$ 1,938,750.00	\$ 1,938,750.00	\$ 7,755,000.00

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 116,325	\$ 77,550	\$ -	\$ 116,325	\$ 77,550	\$ 193,875
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		77,550.00		\$ -	\$ 77,550	\$ -	\$ 77,550
4.3	Construction Project Management / Supervision	1	LS		310,200.00		\$ -	\$ 310,200	\$ -	\$ 310,200
4.4	Utility PM and Project Oversight	1	LS		77,550.00		\$ -	\$ 77,550	\$ -	\$ 77,550
4.5	Site Accommodation, Facilities, Storage	1	LS	77,550.00			\$ 77,550	\$ -	\$ -	\$ 77,550
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 387,750	\$ -	\$ -	\$ 387,750	\$ -	\$ 387,750
4.7	LiDAR	1.00	LS		\$ 13,959	\$ 9,306	\$ -	\$ 13,959	\$ 9,306	\$ 23,265
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 32,571	\$ 21,714	\$ -	\$ 32,571	\$ 21,714	\$ 54,285
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 77,550		\$ -	\$ 77,550	\$ -	\$ 77,550
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 23,265		\$ -	\$ 23,265	\$ -	\$ 23,265
4.15	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 3,877,500.00			\$ 344,322	\$ -	\$ -	\$ 344,322
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 7,755	\$ -	\$ -	\$ 7,755	\$ 7,755
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 421,872	\$ 2,676,720	\$ 416,325	\$ 3,514,917

NEXtera Energy- TO44 Enhanced 2

Comp 225&248 - Buchanan to Ramapo 345kV OH/UG Cables - Single circuit

(New Buchanan - Ramapo 345 kV)

Total: \$ 274,923,153

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,036,928	\$ 10,011,877	\$ 4,004,251	\$ 16,053,056
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 16,530,595	\$ 19,469,828	\$ 15,001,405	\$ 51,001,828
3. OH & ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 40,050,435	\$ 28,189,765	\$ 19,128,515	\$ 87,368,715
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,749,511	\$ 23,839,383	\$ 9,142,277	\$ 39,731,171
SUBTOTAL (Costs):	\$ 65,367,468	\$ 81,510,852	\$ 47,276,449	\$ 194,154,769
CONTRACTOR MARK-UP (OH&P)	\$ 11,766,144	\$ 14,671,953	\$ 8,509,761	\$ 34,947,858
SUBTOTAL:	\$ 77,133,612	\$ 96,182,806	\$ 55,786,209	\$ 229,102,628
CONTINGENCY ON ENTIRE PROJECT	\$ 15,426,722	\$ 19,236,561	\$ 11,157,242	\$ 45,820,526
TOTAL:	\$ 92,560,335	\$ 115,419,367	\$ 66,943,451	\$ 274,923,153

Description of Work: Buchanan to Ramapo 345kV, overhead portion 7.4 miles, and underground portion 8.17 miles (5000 kcmil copper XLPE, single cable per phase).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.17	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,719,000	\$ 2,451,000	\$ 8,170,000
1.3	Flaggers	260	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 416,000	\$ 1,248,000	\$ 416,000	\$ 2,080,000
1.4	K Rail / Lane Control / Metal Plates	43,138	LF	\$ 30	\$ 18	\$ 12	\$ 1,294,128	\$ 776,477	\$ 517,651	\$ 2,588,256
1.5	Police Support	10,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,248,000	\$ 280,800	\$ 1,528,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.17	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 326,800	\$ 980,400	\$ 326,800	\$ 1,634,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,036,928	\$ 10,011,877	\$ 4,004,251	\$ 16,053,056
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,142,166	\$ 761,444	\$ 1,903,610
2.2	Formwork in Trench	303,501	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 607,002	\$ 455,251	\$ 151,750	\$ 1,214,003
2.3	Trench Excavation	15,175	CY		\$ 17.5	\$ 7.5	\$ -	\$ 265,563	\$ 113,813	\$ 379,376
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,581	SF	\$ 50	\$ 25	\$ 14	\$ 79,037	\$ 38,728	\$ 22,130	\$ 139,895
2.5	Supply & Install Thermal Backfill	13,278	CY	\$ 350	\$ 245	\$ 105	\$ 4,647,356	\$ 3,253,149	\$ 1,394,207	\$ 9,294,712
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,182	CY	\$ 200	\$ 125	\$ 50	\$ 1,236,344	\$ 772,715	\$ 309,086	\$ 2,318,145
2.9	Conduit 8" SCH 40PVC	172,550	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 4,934,941	\$ 978,361	\$ 419,297	\$ 6,332,600
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	86,275	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 303,689	\$ 271,767	\$ 116,472	\$ 691,927
2.12	Warning Tape	86,275	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 12,941	\$ 21,569	\$ 8,628	\$ 43,138
2.13	Trench Box Shoring (Vault)	23	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 415,819	\$ 623,729	\$ 1,039,548
2.14	Splice Vault Excavation	2,294	CY		\$ 17.5	\$ 7.5	\$ -	\$ 40,143	\$ 17,204	\$ 57,347
2.15	Splice Vault Supply & Installation	23	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 805,000	\$ 379,500	\$ 885,500	\$ 2,070,000
2.16	Splice Vault Backfill	688	CY		\$ 14.0	\$ 6.0	\$ -	\$ 9,634	\$ 4,129	\$ 13,763

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route	410	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 328,000	\$ 656,000	\$ 656,000	\$ 1,640,000
2.18	HDD along Route	4,100	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 3,280,000	\$ 6,560,000	\$ 6,560,000	\$ 16,400,000
2.19	Air Test Ducts	258,826	LF			\$ 0.25	\$ -	\$ -	\$ 64,706	\$ 64,706
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	14,655	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 205,177	\$ 205,177	\$ 102,588	\$ 512,941
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,071	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 91,108	\$ 95,664	\$ 40,999	\$ 227,770
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	62	EA		\$ 400	\$ 1,200	\$ -	\$ 24,727	\$ 74,181	\$ 98,908
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	62	EA		\$ 10	\$ 15	\$ -	\$ 618	\$ 927	\$ 1,545
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	133	EA		\$ 400	\$ 1,200	\$ -	\$ 53,113	\$ 159,338	\$ 212,451
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	21,815	CY		\$ 24.5	\$ 10.5	\$ -	\$ 534,467	\$ 229,057	\$ 763,524
2.27	Rock Excavation and Removal	11,646	CY		\$ 243	\$ 162	\$ -	\$ 2,829,963	\$ 1,886,642	\$ 4,716,605
2.28	Dewatering	23	EA			\$ 4,000	\$ -	\$ -	\$ 92,000	\$ 92,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	17,469	CF		\$ 1.0	\$ 0.5	\$ -	\$ 17,469	\$ 8,734	\$ 26,203
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 16,530,595	\$ 19,469,828	\$ 15,001,405	\$ 51,001,828
3. OH & ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	135,883	FT	\$ 167	\$ 100	\$ 67	\$ 22,692,534	\$ 13,615,521	\$ 9,077,014	\$ 45,385,069
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	69	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 808,818	\$ 679,407	\$ 194,116	\$ 1,682,341
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	23	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 656,614	\$ 393,969	\$ 262,646	\$ 1,313,229
3.11	Fiber Optic Cable	45,294	FT	\$ 7	\$ 3	\$ 2	\$ 335,043	\$ 150,858	\$ 100,572	\$ 586,473
3.12	Ground Continuity Conductor	45,294	FT	\$ 13	\$ 8	\$ 5	\$ 590,595	\$ 340,932	\$ 227,288	\$ 1,158,814
3.13	345kv OH transmission line	7.4	Miles	\$ 2,000,000	\$ 1,750,000	\$ 1,250,000	\$ 14,800,000	\$ 12,950,000	\$ 9,250,000	\$ 37,000,000
TOTAL - INSULATORS, FITTINGS, HARDWARE:							\$ 40,050,435	\$ 28,189,765	\$ 19,128,515	\$ 87,368,715
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 58,617,957	\$ 57,671,469	\$ 38,134,172	\$ 154,423,598
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,874,169	\$ 1,916,113	\$ -	\$ 2,874,169	\$ 1,916,113	\$ 4,790,282
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,544,235.98		\$ -	\$ 1,544,236	\$ -	\$ 1,544,236
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		6,176,943.93		\$ -	\$ 6,176,944	\$ -	\$ 6,176,944
4.4	Utility PM and Project Oversight	1	LS		1,544,235.98		\$ -	\$ 1,544,236	\$ -	\$ 1,544,236
4.5	Site Accommodation, Facilities, Storage	1	LS	1,544,235.98			\$ 1,544,236	\$ -	\$ -	\$ 1,544,236
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 7,721,180	\$ -	\$ -	\$ 7,721,180	\$ -	\$ 7,721,180
4.7	LiDAR /GPR	1.0	LS		\$ 277,962	\$ 185,308	\$ -	\$ 277,962	\$ 185,308	\$ 463,271
4.8	Geotech	9.00	EA		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 648,579	\$ 432,386	\$ -	\$ 648,579	\$ 432,386	\$ 1,080,965
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,544,236		\$ -	\$ 1,544,236	\$ -	\$ 1,544,236
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 463,271		\$ -	\$ 463,271	\$ -	\$ 463,271
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 929,773	\$ -	\$ -	\$ 929,773	\$ 929,773
4.16	Legal Fees (Real estate)	1.00	LS		-	27,893.19	\$ -	\$ -	\$ 27,893	\$ 27,893
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 5,480,000	\$ -	\$ -	\$ 5,480,000	\$ 5,480,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 58,617,957.43			\$ 5,205,275	\$ -	\$ -	\$ 5,205,275
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 154,424	\$ -	\$ -	\$ 154,424	\$ 154,424
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,749,511	\$ 23,839,383	\$ 9,142,277	\$ 39,731,171

NEXTera Energy- TO44 Enhanced 2

Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits
(Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)

Total: #####

omp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits(Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits (Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)				
1. SUBMARINE CABLE	\$ 633,661,222	\$ 1,284,605,789	\$ 809,554,812	\$ 2,727,821,823
2. TRANSITION STATION	\$ 1,058,356,000	\$ 635,122,881	\$ 423,509,037	\$ 2,116,987,918
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 197,345,613	\$ 642,200,076	\$ 169,792,630	\$ 1,009,338,319
SUBTOTAL (Costs):	\$ 1,889,362,835	\$ 2,561,928,746	\$ 1,402,856,479	\$ 5,854,148,060
CONTRACTOR MARK-UP (OH&P)	\$ 340,085,310	\$ 461,147,174	\$ 252,514,166	\$ 1,053,746,651
SUBTOTAL:	\$ 2,229,448,146	\$ 3,023,075,920	\$ 1,655,370,645	\$ 6,907,894,711
CONTINGENCY ON ENTIRE PROJECT	\$ 445,889,629	\$ 604,615,184	\$ 331,074,129	\$ 1,381,578,942
TOTAL:	\$ 2,675,337,775	\$ 3,627,691,104	\$ 1,986,444,774	\$ 8,289,473,653

Description of Work: Part of Offshore Platform HSA to Buchanan 320kV #1, #2 HVDC project segment, 5000kCMIL, Cu, Single Core, XLPE, submarine cable (122.5 miles)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
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Comp 226 & 227. Offshore Platform HSA to Buchanan Landing 320kV #1, #2 DC Offshore Submarine Cables - Double circuits(Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)

1. SUBMARINE CABLE										
1.1	Submarine Cable - 320kV DC, 5000kCMIL, Cu, Single Core, XLPE, Submarine	2,845,920	FT	\$ 212	\$ 400	\$ 250	\$ 603,335,040	\$ 1,138,368,000	\$ 711,480,000	\$ 2,453,183,040
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 144,042,360	\$ 96,028,240	\$ -	\$ 144,042,360	\$ 96,028,240	\$ 240,070,600
1.3	Submarine Cable Splicing if Required 1600 mm2 Tri-Core	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.5	Outdoor Termination	8	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 223,286	\$ 297,715	\$ 223,286	\$ 744,286
1.6	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.7	Fiber Optic Cable	1,422,960	FT	\$ 7			\$ 10,525,635	\$ -	\$ -	\$ 10,525,635
1.8	Ground Continuity Conductor	1,422,960	FT	\$ 13			\$ 18,553,975	\$ -	\$ -	\$ 18,553,975
1.9							\$ -	\$ -	\$ -	\$ -
1.10	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.11	HDD along Route	1,000	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 800,000	\$ 1,600,000	\$ 1,600,000	\$ 4,000,000
TOTAL - Submarine cable:							\$ 633,661,222	\$ 1,284,605,789	\$ 809,554,812	\$ 2,727,821,823
2. TRANSITION STATION										
2.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
2.2	Demolition	0	LS	-	60,000.00	40,000.00	\$ -	\$ -	\$ -	\$ -
2.3	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
2.4	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
2.5	Site Grading- Excavation for Substation Pad-Rock excavation-Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
2.6	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.7	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
2.8	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
2.9	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
2.10	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
2.11	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
2.12	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
2.13	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
2.14	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, lighting arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
2.18	345kV, lighting arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
2.19	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
2.20	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
2.21	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
2.22	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	863	CY		\$ 17.5	\$ 7.5	\$ -	\$ 15,099	\$ 6,471	\$ 21,570
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	259	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,624	\$ 1,553	\$ 5,177
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	785	CY		\$ 24.5	\$ 10.5	\$ -	\$ 19,236	\$ 8,244	\$ 27,481
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	863	CF		\$ 1.0	\$ 0.5	\$ -	\$ 863	\$ 431	\$ 1,294
2.36	Offshore HVDC Platform	2	EA	\$ 363,750,000	\$ 218,250,000.0	\$ 145,500,000.0	\$ 727,500,000	\$ 436,500,000	\$ 291,000,000	\$ 1,455,000,000
2.37	Offshore_HVDC 1200MW Monopoles	2.0	EA	165,375,000.00	99,225,000.00	66,150,000.00	\$ 330,750,000.00	\$ 198,450,000.00	\$ 132,300,000.00	\$ 661,500,000
TOTAL - Transition station :							\$ 1,058,356,000	\$ 635,122,881	\$ 423,509,037	\$ 2,116,987,918
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 1,692,017,222	\$ 1,919,728,670	\$ 1,233,063,849	\$ 4,844,809,741
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		48,448,097.41		\$ -	\$ 48,448,097	\$ -	\$ 48,448,097
3.3	Construction Project Management / Supervision	1	LS		193,792,389.64		\$ -	\$ 193,792,390	\$ -	\$ 193,792,390
3.4	Utility PM and Project Oversight	1	LS		48,448,097.41		\$ -	\$ 48,448,097	\$ -	\$ 48,448,097
3.5	Site Accommodation, Facilities, Storage	1	LS	48,448,097.41			\$ 48,448,097	\$ -	\$ -	\$ 48,448,097
	Engineering									
3.6	Design Engineering	1	LS		\$ 242,240,487		\$ -	\$ 242,240,487	\$ -	\$ 242,240,487
3.7	Surveying/Staking	1	LS		\$ 33,913,668		\$ -	\$ 33,913,668	\$ -	\$ 33,913,668
3.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	2	EA		\$ 80,000		\$ -	\$ 160,000	\$ -	\$ 160,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 48,448,097		\$ -	\$ 48,448,097	\$ -	\$ 48,448,097
3.12	Environmental-special studies/investigation	1	LS		\$ 870,000		\$ -	\$ 870,000	\$ -	\$ 870,000
3.13	Warranties / LOC's	1	LS		\$ 14,534,429		\$ -	\$ 14,534,429	\$ -	\$ 14,534,429
3.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 12,262	\$ -	\$ -	\$ 12,262	\$ 12,262
3.16	Legal Fees (Real estate)	1.00	LS		-	367.86	\$ -	\$ -	\$ 368	\$ 368
3.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.18	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Sales Tax on Materials	8.8%	LS	\$ 1,692,017,222			\$ 148,897,516	\$ -	\$ -	\$ 148,897,516
3.20	Contractor Permits	1	LS		\$ 4,844,810		\$ -	\$ 4,844,810	\$ -	\$ 4,844,810
3.21	Payment & Performance Bond	1	LS			\$ 165,780,000	\$ -	\$ -	\$ 165,780,000	\$ 165,780,000
3.22	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 197,345,613	\$ 642,200,076	\$ 169,792,630	\$ 1,009,338,319

NEXtera Energy- TO44 Enhanced 2

Comp 254 - Sprain Brook To New Rochelle Landing Onshore 320kV DC UG Cables - Double circuits

(Hudson South OSW platform #1 & #2- Buchanan HVDC #1 320 kV)

Total: \$ 46,564,185

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 425,600	\$ 2,180,560	\$ 831,440	\$ 3,437,600
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,083,818	\$ 3,112,181	\$ 2,240,355	\$ 8,436,354
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 7,390,470	\$ 4,131,620	\$ 2,559,359	\$ 14,081,449
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,227,464	\$ 4,345,372	\$ 1,356,072	\$ 6,928,909
SUBTOTAL (Costs):	\$ 12,127,352	\$ 13,769,733	\$ 6,987,226	\$ 32,884,312
CONTRACTOR MARK-UP (OH&P)	\$ 2,182,923	\$ 2,478,552	\$ 1,257,701	\$ 5,919,176
SUBTOTAL:	\$ 14,310,275	\$ 16,248,285	\$ 8,244,927	\$ 38,803,488
CONTINGENCY ON ENTIRE PROJECT	\$ 2,862,055	\$ 3,249,657	\$ 1,648,985	\$ 7,760,698
TOTAL:	\$ 17,172,330	\$ 19,497,942	\$ 9,893,912	\$ 46,564,185

Description of Work: Part of Offshore Platform HSA to Buchanan 320kV #1, #2 HVDC project segment, 320 DckV 5000 kcmil copper XLPE (1.5 miles)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 4C - Sprain Brook To New Rochelle Landing Onshore 345kV UG Cables -Double circuits(EGC To Sprain Brook 345 kV / Ruland To Sprain Brook 345 kV)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.50	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,050,000	\$ 450,000	\$ 1,500,000
1.3	Flaggers	80	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 128,000	\$ 384,000	\$ 128,000	\$ 640,000
1.4	K Rail / Lane Control / Metal Plates	7,920	LF	\$ 30	\$ 18	\$ 12	\$ 237,600	\$ 142,560	\$ 95,040	\$ 475,200
1.5	Police Support	3,200.0	HR		\$ 120	\$ 27	\$ -	\$ 384,000	\$ 86,400	\$ 470,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	1.50	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 60,000	\$ 180,000	\$ 60,000	\$ 300,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 425,600	\$ 2,180,560	\$ 831,440	\$ 3,437,600
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	1.5	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 209,700	\$ 139,800	\$ 349,500
2.2	Formwork in Trench	63,360	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 126,720	\$ 95,040	\$ 31,680	\$ 253,440
2.3	Trench Excavation	3,168	CY		\$ 17.5	\$ 7.5	\$ -	\$ 55,440	\$ 23,760	\$ 79,200
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	330	SF	\$ 50	\$ 25	\$ 14	\$ 16,500	\$ 8,085	\$ 4,620	\$ 29,205
2.5	Supply & Install Thermal Backfill	1,907	CY	\$ 350	\$ 245	\$ 105	\$ 667,282	\$ 467,097	\$ 200,185	\$ 1,334,564
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,928	CY	\$ 200	\$ 125	\$ 50	\$ 385,616	\$ 241,010	\$ 96,404	\$ 723,030
2.9	Conduit 8" SCH 40PVC	47,520	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 1,359,072	\$ 269,438	\$ 115,474	\$ 1,743,984
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	31,680	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 111,514	\$ 99,792	\$ 42,768	\$ 254,074
2.12	Warning Tape	15,840	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 2,376	\$ 3,960	\$ 1,584	\$ 7,920
2.13	Trench Box Shoring (Vault)	10	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 180,791	\$ 271,186	\$ 451,977
2.14	Splice Vault Excavation	821	CY		\$ 17.5	\$ 7.5	\$ -	\$ 14,373	\$ 6,160	\$ 20,533
2.15	Splice Vault Supply & Installation	10	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 350,000	\$ 165,000	\$ 385,000	\$ 900,000
2.16	Splice Vault Backfill	246	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,450	\$ 1,478	\$ 4,928

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Jack and Bore along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route		LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	79,200	LF			\$ 0.25	\$ -	\$ -	\$ 19,800	\$ 19,800
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	3,202	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 44,831	\$ 44,831	\$ 22,416	\$ 112,078
2.21	PVMT, AGGREGATE, 10", BASE COURSE	890	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 19,907	\$ 20,903	\$ 8,958	\$ 49,768
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	19	EA		\$ 400	\$ 1,200	\$ -	\$ 7,712	\$ 23,137	\$ 30,849
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	19	EA		\$ 10	\$ 15	\$ -	\$ 193	\$ 289	\$ 482
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	19	EA		\$ 400	\$ 1,200	\$ -	\$ 7,626	\$ 22,878	\$ 30,504
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	4,866	CY		\$ 24.5	\$ 10.5	\$ -	\$ 119,212	\$ 51,091	\$ 170,303
2.27	Rock Excavation and Removal	2,660	CY		\$ 243	\$ 162	\$ -	\$ 646,272	\$ 430,848	\$ 1,077,120
2.28	Dewatering	10	EA			\$ 4,000	\$ -	\$ -	\$ 40,000	\$ 40,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	3,989	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,989	\$ 1,995	\$ 5,984
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,083,818	\$ 3,112,181	\$ 2,240,355	\$ 8,436,354
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE	16,632	FT	\$ 166	\$ 100	\$ 66	\$ 2,760,912	\$ 1,656,547	\$ 1,104,365	\$ 5,521,824
3.2	Circuit #1- Cable Splicing- 320 DckV 5000 kcmil copper XLPE	20	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 386,980	\$ 196,930	\$ 56,266	\$ 640,175
3.3	Circuit #1- Cable Termination- 320 DckV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.4	Circuit #2- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE	16,632	FT	\$ 166	\$ 100	\$ 66	\$ 2,760,912	\$ 1,656,547	\$ 1,104,365	\$ 5,521,824
3.5	Circuit #2- Cable Splicing- 320 DckV 5000 kcmil copper XLPE	20	EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ 386,980	\$ 196,930	\$ 56,266	\$ 640,175
3.6	Circuit #2- Cable Termination- 320 DckV 5000 kcmil copper XLPE	6	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 272,460	\$ 59,079	\$ 16,880	\$ 348,419
3.7	Circuit #3- Procurement & Installation- 320 DckV 5000 kcmil copper XLPE		FT	\$ 166	\$ 100	\$ 66	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320 DckV 5000 kcmil copper XLPE		EA	\$ 19,349	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320 DckV 5000 kcmil copper XLPE		EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	10	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 209,875	\$ 125,925	\$ 83,950	\$ 419,749
3.11	Fiber Optic Cable	16,632	FT	\$ 7	\$ 3	\$ 2	\$ 123,027	\$ 55,395	\$ 36,930	\$ 215,351
3.12	Ground Continuity Conductor	16,632	FT	\$ 13	\$ 8	\$ 5	\$ 216,865	\$ 125,189	\$ 83,459	\$ 425,513
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 7,390,470	\$ 4,131,620	\$ 2,559,359	\$ 14,081,449
Comp 4 - Dunwoodie To New Rochelle Landing 345kv Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 10,899,888	\$ 9,424,361	\$ 5,631,154	\$ 25,955,403
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 451,665	\$ 301,110	\$ -	\$ 451,665	\$ 301,110	\$ 752,776
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		259,554.03		\$ -	\$ 259,554	\$ -	\$ 259,554
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		1,038,216.11		\$ -	\$ 1,038,216	\$ -	\$ 1,038,216
4.4	Utility PM and Project Oversight	1	LS		259,554.03		\$ -	\$ 259,554	\$ -	\$ 259,554
4.5	Site Accommodation, Facilities, Storage	1	LS	259,554.03			\$ 259,554	\$ -	\$ -	\$ 259,554
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,297,770	\$ -	\$ -	\$ 1,297,770	\$ -	\$ 1,297,770
4.7	LIDAR /GPR	1.0	LS		\$ 46,720	\$ 31,146	\$ -	\$ 46,720	\$ 31,146	\$ 77,866
4.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 109,013	\$ 72,675	\$ -	\$ 109,013	\$ 72,675	\$ 181,688
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 259,554		\$ -	\$ 259,554	\$ -	\$ 259,554
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 77,866		\$ -	\$ 77,866	\$ -	\$ 77,866
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 1,500	\$ -	\$ -	\$ 1,500	\$ 1,500
4.16	Legal Fees (Real estate)	1.00	LS		-	45.00	\$ -	\$ -	\$ 45	\$ 45
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 920,000	\$ -	\$ -	\$ 920,000	\$ 920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 10,899,887.91			\$ 967,910	\$ -	\$ -	\$ 967,910
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 25,955	\$ -	\$ -	\$ 25,955	\$ 25,955
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,227,464	\$ 4,345,372	\$ 1,356,072	\$ 6,928,909

NEXTera Energy- TO39 Core 4

Comp 85 - Sprain Brook Sub to Sprain Brook Landing 345kV Onshore UG Cables -Single circuit - Single circuit

Farragut-Sprain Brook 345KV

Total: \$ 72,630,069

NEXTera Energy- TO39 Core 4				
	Material Supply	Labor Supply	Equip Supply	Total
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 802,816	\$ 3,964,730	\$ 1,586,886	\$ 6,354,432
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 5,504,698	\$ 5,167,046	\$ 3,326,770	\$ 13,998,514
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 10,234,014	\$ 6,167,008	\$ 3,965,048	\$ 20,366,071
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,876,078	\$ 6,488,998	\$ 2,208,328	\$ 10,573,404
SUBTOTAL (Costs):	\$ 18,417,606	\$ 21,787,782	\$ 11,087,033	\$ 51,292,421
CONTRACTOR MARK-UP (OH&P)	\$ 3,315,169	\$ 3,921,801	\$ 1,995,666	\$ 9,232,636
SUBTOTAL:	\$ 21,732,776	\$ 25,709,583	\$ 13,082,699	\$ 60,525,057
CONTINGENCY ON ENTIRE PROJECT	\$ 4,346,555	\$ 5,141,917	\$ 2,616,540	\$ 12,105,011
TOTAL:	\$ 26,079,331	\$ 30,851,499	\$ 15,699,239	\$ 72,630,069

Description of Work: Part of Farragut-Sprain Brook 345kV segment -UG cable										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp XX - Ruland Road - Newbridge138 kV #3 (567 Line) Onshore UG Cables -Single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	3.24	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 2,268,000	\$ 972,000	\$ 3,240,000
1.3	Flaggers	100	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 160,000	\$ 480,000	\$ 160,000	\$ 800,000
1.4	K Rail / Lane Control / Metal Plates	17,107	LF	\$ 30	\$ 18	\$ 12	\$ 513,216	\$ 307,930	\$ 205,286	\$ 1,026,432
1.5	Police Support	4,000.0	HR		\$ 120	\$ 27	\$ -	\$ 480,000	\$ 108,000	\$ 588,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	3.24	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 129,600	\$ 388,800	\$ 129,600	\$ 648,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 802,816	\$ 3,964,730	\$ 1,586,886	\$ 6,354,432
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	3.24	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 452,952	\$ 301,968	\$ 754,920
2.2	Formwork in Trench	134,218	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 268,435	\$ 201,326	\$ 67,109	\$ 536,870
2.3	Trench Excavation	6,711	CY		\$ 17.5	\$ 7.5	\$ -	\$ 117,440	\$ 50,332	\$ 167,772
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	699	SF	\$ 50	\$ 25	\$ 14	\$ 34,953	\$ 17,127	\$ 9,787	\$ 61,866
2.5	Supply & Install Thermal Backfill	5,872	CY	\$ 350	\$ 245	\$ 105	\$ 2,055,207	\$ 1,438,645	\$ 616,562	\$ 4,110,414
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	2,734	CY	\$ 200	\$ 125	\$ 50	\$ 546,750	\$ 341,719	\$ 136,688	\$ 1,025,157
2.9	Conduit 8" SCH 40PVC	68,429	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 1,957,064	\$ 387,991	\$ 166,282	\$ 2,511,337
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	34,214	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 120,435	\$ 107,775	\$ 46,189	\$ 274,399
2.12	Warning Tape	34,214	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 5,132	\$ 8,554	\$ 3,421	\$ 17,107
2.13	Trench Box Shoring (Vault)	11	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 198,870	\$ 298,305	\$ 497,175
2.14	Splice Vault Excavation	1,097	CY		\$ 17.5	\$ 7.5	\$ -	\$ 19,199	\$ 8,228	\$ 27,427
2.15	Splice Vault Supply & Installation	11	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 385,000	\$ 181,500	\$ 423,500	\$ 990,000
2.16	Splice Vault Backfill	329	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,608	\$ 1,975	\$ 6,582
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	102,643	LF			\$ 0.25	\$ -	\$ -	\$ 25,661	\$ 25,661
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	6,516	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 91,218	\$ 91,218	\$ 45,609	\$ 228,044
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,810	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 40,505	\$ 42,530	\$ 18,227	\$ 101,262
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	27	EA		\$ 400	\$ 1,200	\$ -	\$ 10,935	\$ 32,805	\$ 43,740
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	27	EA		\$ 10	\$ 15	\$ -	\$ 273	\$ 410	\$ 683
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	59	EA		\$ 400	\$ 1,200	\$ -	\$ 23,488	\$ 70,464	\$ 93,952
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 20,000
2.26	Excess Materials Disposal to Certified Backfill	9,722	CY		\$ 24.5	\$ 10.5	\$ -	\$ 238,201	\$ 102,086	\$ 340,287
2.27	Rock Excavation and Removal	5,205	CY		\$ 243	\$ 162	\$ -	\$ 1,264,887	\$ 843,258	\$ 2,108,146
2.28	Dewatering	11	EA			\$ 4,000	\$ -	\$ -	\$ 44,000	\$ 44,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	7,808	CF		\$ 1.0	\$ 0.5	\$ -	\$ 7,808	\$ 3,904	\$ 11,712
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 5,504,698	\$ 5,167,046	\$ 3,326,770	\$ 13,998,514
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 5000 kcmil copper XLPE	53,888	FT	\$ 167	\$ 100	\$ 67	\$ 8,999,243	\$ 5,399,546	\$ 3,599,697	\$ 17,998,485
3.2	Circuit #1- Cable Splicing- 345kV 5000 kcmil copper XLPE	33	EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ 386,826	\$ 324,934	\$ 92,838	\$ 804,598
3.3	Circuit #1- Cable Termination- 345kV 5000 kcmil copper XLPE	6	EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
3.4	Circuit #2- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 5000 kcmil copper XLPE		FT	\$ 167	\$ 100	\$ 67	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 5000 kcmil copper XLPE		EA	\$ 11,722	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 5000 kcmil copper XLPE		EA	\$ 27,805	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	11	EA	\$ 28,548	\$ 17,129	\$ 11,419	\$ 314,033	\$ 188,420	\$ 125,613	\$ 628,066
3.11	Fiber Optic Cable	17,963	FT	\$ 7	\$ 3	\$ 2	\$ 132,869	\$ 59,826	\$ 39,884	\$ 232,579
3.12	Ground Continuity Conductor	17,963	FT	\$ 13	\$ 8	\$ 5	\$ 234,214	\$ 135,204	\$ 90,136	\$ 459,554
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 10,234,014	\$ 6,167,008	\$ 3,965,048	\$ 20,366,071
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 16,541,529	\$ 15,298,784	\$ 8,878,705	\$ 40,719,017
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 725,325	\$ 483,550	\$ -	\$ 725,325	\$ 483,550	\$ 1,208,874
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		407,190.17		\$ -	\$ 407,190	\$ -	\$ 407,190
4.3	Construction Project Management / Supervision	1	LS		1,628,760.69		\$ -	\$ 1,628,761	\$ -	\$ 1,628,761
4.4	Utility PM and Project Oversight	1	LS		407,190.17		\$ -	\$ 407,190	\$ -	\$ 407,190
4.5	Site Accommodation, Facilities, Storage	1	LS	407,190.17			\$ 407,190	\$ -	\$ -	\$ 407,190
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 2,035,951	\$ -	\$ -	\$ 2,035,951	\$ -	\$ 2,035,951
4.7	LiDAR /GPR	1.0	LS		\$ 73,294	\$ 48,863	\$ -	\$ 73,294	\$ 48,863	\$ 122,157
4.8	Geotech	4.00	EA		2,730	1,820	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
4.9	Surveying/Staking	1	LS		\$ 171,020	\$ 114,013	\$ -	\$ 171,020	\$ 114,013	\$ 285,033
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 407,190		\$ -	\$ 407,190	\$ -	\$ 407,190
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 122,157		\$ -	\$ 122,157	\$ -	\$ 122,157
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 71,751	\$ -	\$ -	\$ 71,751	\$ 71,751
4.16	Legal Fees (Real estate)	1.00	LS		-	2,152.53	\$ -	\$ -	\$ 2,153	\$ 2,153
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,440,000	\$ -	\$ -	\$ 1,440,000	\$ 1,440,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 16,541,528.51			\$ 1,468,888	\$ -	\$ -	\$ 1,468,888
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 40,719	\$ -	\$ -	\$ 40,719	\$ 40,719
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,876,078	\$ 6,488,998	\$ 2,208,328	\$ 10,573,404

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Caweld, DSA, 4/0 , T, CROSS	200	EA	165.00	75.00		\$ 33,000	\$ 15,000	\$ -	\$ 48,000
2.23	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,430	\$ 1,215	\$ 135	\$ 3,780
2.24	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.25	Splice Vault Excavation	1,294	CY		\$ 17.5	\$ 7.5	\$ -	\$ 22,649	\$ 9,707	\$ 32,356
2.26	Splice Vault Supply & Installation	2	EA	\$ 45,500	\$ 21,450	\$ 50,050	\$ 91,000	\$ 42,900	\$ 100,100	\$ 234,000
2.27	Splice Vault Backfill	388	CY		\$ 14.0	\$ 6.0	\$ -	\$ 5,436	\$ 2,330	\$ 7,765
2.28	Restoration (incl. Paving)	1	LS	\$ 15,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000	\$ 20,000	\$ 15,000	\$ 50,000
2.29	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 35,000	\$ 15,000	\$ -	\$ 35,000	\$ 15,000	\$ 50,000
2.30	Excess Materials Disposal to Certified Backfill	1,178	CY		\$ 24.5	\$ 10.5	\$ -	\$ 28,855	\$ 12,366	\$ 41,221
2.31	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000
2.33	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.34	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.35	Excavated material - stockpile management	1,294	CF		\$ 1.0	\$ 0.5	\$ -	\$ 1,294	\$ 647	\$ 1,941
2.36							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 416,351	\$ 564,240	\$ 435,307	\$ 1,415,898
Comp 17. New Rochelle Landing to Hempstead Harbor Landing (Shore Road) 345kV Offshore Submarine Cables							\$ 140,175,346	\$ 117,646,872	\$ 75,380,752	\$ 333,202,969
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 6,000,000	\$ 4,000,000	\$ -	\$ 6,000,000	\$ 4,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,332,029.69		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		13,328,118.77		\$ -	\$ 13,328,119	\$ -	\$ 13,328,119
3.4	Utility PM and Project Oversight	1	LS		3,332,029.69		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.5	Site Accommodation, Facilities, Storage	1	LS	3,332,029.69			\$ 3,332,030	\$ -	\$ -	\$ 3,332,030
	Engineering									
3.6	Design Engineering	1	LS		\$ 16,660,148		\$ -	\$ 16,660,148	\$ -	\$ 16,660,148
3.7	Surveying/Staking	1	LS		\$ 2,332,421		\$ -	\$ 2,332,421	\$ -	\$ 2,332,421
3.8	Geotech	10.00	EA		2,730.00	1,820.00	\$ -	\$ 27,300	\$ 18,200	\$ 45,500
	Testing & Commissioning / Inspection									
3.9	Testing & Commissioning / End to End Testing of Subsea Cable	4	EA		\$ 80,000		\$ -	\$ 320,000	\$ -	\$ 320,000
3.10	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,332,030		\$ -	\$ 3,332,030	\$ -	\$ 3,332,030
3.11	Environmental-special studies/investigation	-	LS				\$ -	\$ -	\$ -	\$ -
3.12	Warranties / LOC's	1	LS		\$ 999,609		\$ -	\$ 999,609	\$ -	\$ 999,609
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS		\$ -	\$ 749,316	\$ -	\$ -	\$ 749,316	\$ 749,316
3.15	Legal Fees (Real estate)	1.00	LS		-	22,479.48	\$ -	\$ -	\$ 22,479	\$ 22,479
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Insurance (specialty, e.g. railroad)		Crossing				\$ -	\$ -	\$ -	\$ -
3.19	Allowance for Funds Used During Construction (AFUDC)		LS				\$ -	\$ -	\$ -	\$ -
3.20	Sales Tax on Materials	8.8%	LS	\$ 140,175,346			\$ 12,335,430	\$ -	\$ -	\$ 12,335,430
3.21	Contractor Permits	1	LS		\$ 333,203		\$ -	\$ 333,203	\$ -	\$ 333,203
3.22	Payment & Performance Bond	1	LS			\$ 11,760,000	\$ -	\$ -	\$ 11,760,000	\$ 11,760,000
3.23	Marine / Specialty Insurance		LS				\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 15,667,460	\$ 50,496,889	\$ 16,549,995	\$ 82,714,345

NEXtera Energy- TO44 Enhanced 2

Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit

(Holbrook -Pilgrim 138kv)

Total: \$ 238,775,725

NEXtera Energy- TO44 Enhanced 2				
	Material Supply	Labor Supply	Equip Supply	Total
Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit(Holbrook -Pilgrim 138kv)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,897,280	\$ 14,241,968	\$ 5,708,112	\$ 22,847,360
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 20,396,697	\$ 16,629,197	\$ 10,827,799	\$ 47,853,693
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 31,216,810	\$ 19,377,857	\$ 12,479,700	\$ 63,074,366
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,178,312	\$ 21,187,728	\$ 7,485,465	\$ 34,851,505
SUBTOTAL (Costs):	\$ 60,689,100	\$ 71,436,750	\$ 36,501,075	\$ 168,626,925
CONTRACTOR MARK-UP (OH&P)	\$ 10,924,038	\$ 12,858,615	\$ 6,570,193	\$ 30,352,846
SUBTOTAL:	\$ 71,613,137	\$ 84,295,365	\$ 43,071,268	\$ 198,979,771
CONTINGENCY ON ENTIRE PROJECT	\$ 14,322,627	\$ 16,859,073	\$ 8,614,254	\$ 39,795,954
TOTAL:	\$ 85,935,765	\$ 101,154,438	\$ 51,685,522	\$ 238,775,725

Description of Work: Holbrook to Pilgrim. 5000 kmil copper XLPE, single cable per phase.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Comp 210 - Holbrook -Pilgrim 138 kV Onshore UG Cables -Single circuit(Holbrook -Pilgrim 138kv)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.70	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,190,000	\$ 3,510,000	\$ 11,700,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	61,776	LF	\$ 30	\$ 18	\$ 12	\$ 1,853,280	\$ 1,111,968	\$ 741,312	\$ 3,706,560
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.70	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 468,000	\$ 1,404,000	\$ 468,000	\$ 2,340,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,897,280	\$ 14,241,968	\$ 5,708,112	\$ 22,847,360
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.70	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,635,660	\$ 1,090,440	\$ 2,726,100
2.2	Formwork in Trench	479,784	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 959,568	\$ 719,676	\$ 239,892	\$ 1,919,136
2.3	Trench Excavation	39,982	CY		\$ 17.5	\$ 7.5	\$ -	\$ 699,685	\$ 299,865	\$ 999,550
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,499	SF	\$ 50	\$ 25	\$ 14	\$ 124,944	\$ 61,222	\$ 34,984	\$ 221,150
2.5	Supply & Install Thermal Backfill	20,991	CY	\$ 350	\$ 245	\$ 105	\$ 7,346,693	\$ 5,142,685	\$ 2,204,008	\$ 14,693,385
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	9,772	CY	\$ 200	\$ 125	\$ 50	\$ 1,954,453	\$ 1,221,533	\$ 488,613	\$ 3,664,600
2.9	Conduit 8" SCH 40PVC	247,104	LF	\$ 28.6	\$ 5.7	\$ 2.4	\$ 7,067,174	\$ 1,401,080	\$ 600,463	\$ 9,068,717
2.10	Conduit 4" SCH 40PVC	0	LF	\$ 9.8	\$ 4.20	\$ 1.8	\$ -	\$ -	\$ -	\$ -
2.11	Conduit 2" SCH 40PVC	123,552	LF	\$ 3.5	\$ 3.15	\$ 1.4	\$ 434,903	\$ 389,189	\$ 166,795	\$ 990,887
2.12	Warning Tape	123,552	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,533	\$ 30,888	\$ 12,355	\$ 61,776
2.13	Trench Box Shoring (Vault)	37	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 668,927	\$ 1,003,390	\$ 1,672,316
2.14	Splice Vault Excavation	5,065	CY		\$ 17.5	\$ 7.5	\$ -	\$ 88,636	\$ 37,987	\$ 126,622
2.15	Splice Vault Supply & Installation	37	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,295,000	\$ 610,500	\$ 1,424,500	\$ 3,330,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.16	Splice Vault Backfill	1,519	CY		\$ 14.0	\$ 6.0	\$ -	\$ 21,273	\$ 9,117	\$ 30,389
2.17	Jack and Bore along Route	915	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 732,000	\$ 1,464,000	\$ 1,464,000	\$ 3,660,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	370,656	LF			\$ 0.25	\$ -	\$ -	\$ 92,664	\$ 92,664
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	22,923	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 320,924	\$ 320,924	\$ 160,462	\$ 802,310
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,368	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 142,506	\$ 149,631	\$ 64,127	\$ 356,264
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	98	EA		\$ 400	\$ 1,200	\$ -	\$ 39,089	\$ 117,267	\$ 156,356
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	98	EA		\$ 10	\$ 15	\$ -	\$ 977	\$ 1,466	\$ 2,443
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	210	EA		\$ 400	\$ 1,200	\$ -	\$ 83,962	\$ 251,887	\$ 335,849
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 448,266	\$ 298,844	\$ -	\$ 448,266	\$ 298,844	\$ 747,110
2.26	Excess Materials Disposal to Certified Backfill	56,586	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,386,348	\$ 594,149	\$ 1,980,498
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	37	EA			\$ 4,000	\$ -	\$ -	\$ 148,000	\$ 148,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	45,047	CF		\$ 1.0	\$ 0.5	\$ -	\$ 45,047	\$ 22,523	\$ 67,570
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 20,396,697	\$ 16,629,197	\$ 10,827,799	\$ 47,853,693
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 5000 kcmil copper XLPE	194,594	FT	\$ 145	\$ 87	\$ 58	\$ 28,216,188	\$ 16,929,713	\$ 11,286,475	\$ 56,432,376
3.2	Circuit #1- Cable Splicing- 138kV 5000 kcmil copper XLPE	111	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 654,678	\$ 1,092,959	\$ 312,274	\$ 2,059,911
3.3	Circuit #1- Cable Termination- 138kV 5000 kcmil copper XLPE	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 5000 kcmil copper XLPE		FT	\$ 145	\$ 87	\$ 58	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 5000 kcmil copper XLPE		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 5000 kcmil copper XLPE		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	37	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 986,383	\$ 591,830	\$ 394,553	\$ 1,972,766
3.11	Fiber Optic Cable	64,865	FT	\$ 7	\$ 3	\$ 2	\$ 479,805	\$ 216,039	\$ 144,026	\$ 839,869
3.12	Ground Continuity Conductor	64,865	FT	\$ 13	\$ 8	\$ 5	\$ 845,772	\$ 488,237	\$ 325,492	\$ 1,659,501
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 31,216,810	\$ 19,377,857	\$ 12,479,700	\$ 63,074,366
Comp 4 - Dunwoodie To New Rochelle Landing 345kV Onshore UG Cables -single circuit(EGC To Dunwoodie 345 kV)							\$ 54,510,787	\$ 50,249,022	\$ 29,015,610	\$ 133,775,420
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,377,939	\$ 1,585,293	\$ -	\$ 2,377,939	\$ 1,585,293	\$ 3,963,232
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,337,754.20		\$ -	\$ 1,337,754	\$ -	\$ 1,337,754
4.3	Construction Project Management / Supervision	1	LS		5,351,016.79		\$ -	\$ 5,351,017	\$ -	\$ 5,351,017
4.4	Utility PM and Project Oversight	1	LS		1,337,754.20		\$ -	\$ 1,337,754	\$ -	\$ 1,337,754
4.5	Site Accommodation, Facilities, Storage	1	LS	1,337,754.20			\$ 1,337,754	\$ -	\$ -	\$ 1,337,754
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 6,688,771	\$ -	\$ -	\$ 6,688,771	\$ -	\$ 6,688,771
4.7	LiDAR /GPR	1.0	LS		\$ 240,796	\$ 160,531	\$ -	\$ 240,796	\$ 160,531	\$ 401,326
4.8	Geotech	12.00	EA		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 561,857	\$ 374,571	\$ -	\$ 561,857	\$ 374,571	\$ 936,428
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,337,754		\$ -	\$ 1,337,754	\$ -	\$ 1,337,754
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 401,326		\$ -	\$ 401,326	\$ -	\$ 401,326
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 436,364	\$ -	\$ -	\$ 436,364	\$ 436,364
4.16	Legal Fees (Real estate)	1.00	LS		-	13,090.92	\$ -	\$ -	\$ 13,091	\$ 13,091
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,760,000	\$ -	\$ -	\$ 4,760,000	\$ 4,760,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 54,510,787.43			\$ 4,840,558	\$ -	\$ -	\$ 4,840,558
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 133,775	\$ -	\$ -	\$ 133,775	\$ 133,775
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,178,312	\$ 21,187,728	\$ 7,485,465	\$ 34,851,505

NEXTera Energy- TO44 Enhanced 2	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO44 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 _Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided
36	Spare conduit has been added to all UG conduit system
37	The HDD, jack&bore quantity is based on information provided by the developer.
38	Existing 138/345kv UG upgrade, assumed no work is required for existing conduit systems, the splice quantity is pending on when the existing splice vault quantity is provided. The 138KV UG conductor cost is based on 4000 kcmil XLPE cable.
39	Assume the cable trench in between transition manholes and transition station will be covered by submarine cable supplier/contractor
40	Please also refer to each tab for component specific assumptions and clarifications
41	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 3 circuits, 2 cable per circuit, so there are 6 passes.
42	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications -	
43	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
44	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
45	Substation pad is based on 8" base and 6" surfacing rock.
46	If required, the firewalls for transformers/PAR/Reactors are assumed 30' tall.
47	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
48	Substation quantity takeoff is based on the plot and one line drawings provided, takeoff assumptions details please see each tab
49	Assume concrete cantilever retaining wall for Sprain Brook expansion, the assumed dimension details please see the tab
50	Assume 70% rock for Sprain brook 345kV expansion excavation
51	Assume 90% rock for new Sprain brook HVDC yard excavation

Propel NY - TO47 BS1		
REVISION: 1		
Propel NY - TO47 BS1 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1 - New Rochelle 345kV Substation	\$ 5,189,956
Direct Labor, Material & Equipment Costs	2 - Shore Road 345 kV GIS Substation	\$ 96,036,478
Direct Labor, Material & Equipment Costs	3 - Ruland Road 345/138 kV Substation	\$ 85,451,972
Direct Labor, Material & Equipment Costs	4 - Barrett 345 kV Substation	\$ 56,131,681
Direct Labor, Material & Equipment Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 21,413,864
Direct Labor, Material & Equipment Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	\$ 9,865,160
Direct Labor, Material & Equipment Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 4,984,863
Direct Labor, Material & Equipment Costs	8 -Existing Shore Road 138 kV_ Interconnection	\$ 5,000,161
Direct Labor, Material & Equipment Costs	9 -Existing Holbrook 138 Kv_ Upgrade	\$ 1,013,645
Direct Labor, Material & Equipment Costs	10 -Existing Newbridge 138 Kv_ Upgrade	\$ 2,462,790
Direct Labor, Material & Equipment Costs	11 - Existing EGC 138 kV_ Upgrade	\$ 8,195,943
Direct Labor, Material & Equipment Costs	12 - Existing Rainey 345 kV_ Upgrade	\$ 5,218,315
Direct Labor, Material & Equipment Costs	13 - Existing EGC 345 kV_ Upgrade	\$ 64,707,842
SUBTOTAL (Costs):		\$ 365,672,671
CONTRACTOR MARK-UP (OH&P)		\$ 62,133,530
SUBTOTAL (AFTER MU):		\$ 427,806,201
CONTINGENCY ON ENTIRE PROJECT		\$ 85,561,240
Substation TOTAL:		\$ 513,367,442
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	BS1.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$ 100,737,410
Direct Labor, Material & Equipment Costs	BS1.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 307,723,518
Direct Labor, Material & Equipment Costs	BS1.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit	\$ 7,664,587
Direct Labor, Material & Equipment Costs	BS1.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 118,629,508
Direct Labor, Material & Equipment Costs	BS1.5 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 202,597,296
Direct Labor, Material & Equipment Costs	BS1.6a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (one line each circuit)	\$ 148,375,821
Direct Labor, Material & Equipment Costs	BS1.6a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 32,237,380
Direct Labor, Material & Equipment Costs	BS1.6b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit	\$ 108,543,450
SUBTOTAL (Costs):		\$ 1,026,508,970
CONTRACTOR MARK-UP (OH&P)		\$ 184,771,615
SUBTOTAL (AFTER MU):		\$ 1,211,280,585
CONTINGENCY ON ENTIRE PROJECT		\$ 242,256,117
Transmission Line TOTAL:		\$ 1,453,536,702
Propel NY - TO47 BS1Total Direct Cost		\$ 1,966,904,144

Propel NY - TO47 BS1 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1 - New Rochelle 345kV Substation	\$ 4,190,336
Indirect Costs	2 - Shore Road 345 kV GIS Substation	\$ 28,048,296
Indirect Costs	3 - Ruland Road 345/138 kV Substation	\$ 28,915,079
Indirect Costs	4 - Barrett 345 kV Substation	\$ 26,548,456
Indirect Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 3,217,283
Indirect Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	\$ 3,181,714
Indirect Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 1,610,496
Indirect Costs	8 -Existing Shore Road 138 kV_ Interconnection	\$ 1,613,343
Indirect Costs	9 -Existing Holbrook 138 Kv_ Upgrade	\$ 333,220
Indirect Costs	10 -Existing Newbridge 138 Kv_ Upgrade	\$ 816,867
Indirect Costs	11 - Existing EGC 138 kV_ Upgrade	\$ 2,572,822
Indirect Costs	12 - Existing Rainey 345 kV_ Upgrade	\$ 1,719,879
Indirect Costs	13 - Existing EGC 345 kV_ Upgrade	\$ 49,579,948
SUBTOTAL (Costs):		\$ 152,347,739
CONTRACTOR MARK-UP (OH&P)		\$ 27,422,593
SUBTOTAL (AFTER MU):		\$ 179,770,332
CONTINGENCY ON ENTIRE PROJECT		\$ 35,954,066
Substation TOTAL:		\$ 215,724,399
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	BS1.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$ 25,517,620
Indirect Costs	BS1.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 78,106,163
Indirect Costs	BS1.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit	\$ 2,465,524
Indirect Costs	BS1.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 30,726,945
Indirect Costs	BS1.5 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 51,255,552
Indirect Costs	BS1.6a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (one line each circuit)	\$ 41,406,484
Indirect Costs	BS1.6a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 8,473,490
Indirect Costs	BS1.6b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit	\$ 27,372,674
SUBTOTAL (Costs):		\$ 265,324,452
CONTRACTOR MARK-UP (OH&P)		\$ 47,758,401
SUBTOTAL (AFTER MU):		\$ 313,082,853
CONTINGENCY ON ENTIRE PROJECT		\$ 62,616,571
Transmission Line TOTAL:		\$ 375,699,424
Propel NY - TO47 BS1 Total Indirect Cost		\$ 591,423,823
Propel NY - TO47 BS1 Total		\$ 2,558,327,967

Propel NY - TO47 BS1

1 - New Rochelle 345kV Substation

Total: \$ 13,282,494

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
1 - New Rochelle 345kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS	\$ 227,559	\$ 260,067	\$ 162,542	\$ 650,169
3. SUBSTATION STRUCTURES	\$ 280,966	\$ 288,799	\$ 189,353	\$ 759,118
4. MAJOR EQUIPMENT	\$ 527,046	\$ 163,391	\$ 70,025	\$ 760,461
5. LOW VOLTAGE & CONTROL CABLE	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH	\$ 198,230	\$ 43,314	\$ 12,044	\$ 253,588
7. GROUND GRID	\$ 56,711	\$ 40,853	\$ 9,473	\$ 107,037
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 270,692	\$ 1,145,032	\$ 2,774,612	\$ 4,190,336
SUBTOTAL (Costs):	\$ 2,756,973	\$ 2,795,584	\$ 3,827,734	\$ 9,380,292
CONTRACTOR MARK-UP (OH&P)	\$ 496,255	\$ 503,205	\$ 688,992	\$ 1,688,453
SUBTOTAL:	\$ 3,253,229	\$ 3,298,789	\$ 4,516,727	\$ 11,068,745
CONTINGENCY ON ENTIRE PROJECT	\$ 650,646	\$ 659,758	\$ 903,345	\$ 2,213,749
TOTAL:	\$ 3,903,874	\$ 3,958,547	\$ 5,420,072	\$ 13,282,494

Description of Work: New, greenfield substation to be called “New Rochelle Substation,” which would be 345 kV and located near 60 Echo Avenue in the City of New Rochelle, Westchester County. The substation would allow for the transition of electric submarine transmission cables to electric underground transmission cables at a location outside of the shoreline of Long Island Sound.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1 - New Rochelle 345kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 19,980	\$ 13,320	\$ 33,300
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,698	SY	4.85	7.20	4.80	\$ 17,933	\$ 26,622	\$ 17,748	\$ 62,304
1.4	Strip and Dispose Top Soil	2,985	CY		24.50	10.50	\$ -	\$ 73,124	\$ 31,339	\$ 104,463
1.5	Site Grading- Excavation for Substation Pad	8,954	CY		9.00	6.00	\$ -	\$ 80,586	\$ 53,724	\$ 134,310
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	4,835	CY		21.00	9.00	\$ -	\$ 101,538.36	\$ 43,516.44	\$ 145,054.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,253	CY		2.40	1.60	\$ -	\$ 17,407	\$ 11,604	\$ 29,011
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,835	CY	25.00	2.40	1.60	\$ 120,879	\$ 11,604	\$ 7,736	\$ 140,220
1.9	Blasting		EA	-			\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,954	SY	11.00	6.00	4.00	\$ 98,494	\$ 53,724	\$ 35,816	\$ 188,034
1.11	Site Surfacing - Aggregate 6" Thick	8,954	SY	16.50	4.50	3.00	\$ 147,741	\$ 40,293	\$ 26,862	\$ 214,896
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,285	LF	13.85	13.85	6.92	\$ 17,795	\$ 17,795	\$ 8,897	\$ 44,487
1.13	24' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	328,812.00	38,400.00	25,368.00	\$ 328,812	\$ 38,400	\$ 25,368	\$ 392,580
1.16	Seeding	25,302	SF	1.50	1.50	1.00	\$ 37,953	\$ 37,953	\$ 25,302	\$ 101,208
1.17	Erosion Control-Silt fence install & remove	2,307	LF	2.41	3.16	0.72	\$ 5,560	\$ 7,290	\$ 1,661	\$ 14,511
1.18	Temporary fencing	1,538	LF	7.50	5.25	2.25	\$ 11,535	\$ 8,075	\$ 3,461	\$ 23,070
1.19	Substation entrance with asphalt	1,085	SY	19.50	26.00	19.50	\$ 21,164	\$ 28,219	\$ 21,164	\$ 70,547
1.20	Guardrail	532	LF	24.00	32.00	24.00	\$ 12,768	\$ 17,024	\$ 12,768	\$ 42,560
1.21	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.22	Retaining Wall	1,140	LF	312.00	234.00	234.00	\$ 355,680	\$ 266,760	\$ 266,760	\$ 889,200
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	36	CY	703.89	804.44	502.78	\$ 25,072	\$ 28,654	\$ 17,909	\$ 71,635
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	33	CY	703.89	804.44	502.78	\$ 23,355	\$ 26,691	\$ 16,682	\$ 66,728
2.5	345kV, Bus support-1 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch - (Double Break)	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.30	Precast Concrete Piles-12"X80'	-	EA							
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 227,559	\$ 260,067	\$ 162,542	\$ 650,169
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	2	EA	23,400.00	14,040.00	9,360.00	\$ 46,800	\$ 28,080	\$ 18,720	\$ 93,600
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.5	345kV, Bus support-1 Ph	10	EA	4,810.00	2,886.00	1,924.00	\$ 48,100	\$ 28,860	\$ 19,240	\$ 96,200
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch - (Double Break)	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.14	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	636	LF	25.00	184.94	123.29	\$ 15,900	\$ 117,621	\$ 78,414	\$ 211,934
3.20	AL. Bus fittings	1	LS	19,080.00	19,080.00	9,540.00	\$ 19,080	\$ 19,080	\$ 9,540	\$ 47,700
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 280,966	\$ 288,799	\$ 189,353	\$ 759,118
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch - (Double Break)	3	EA	68,900.00	21,703.50	9,301.50	\$ 206,700	\$ 65,111	\$ 27,905	\$ 299,715
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA		11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		3,150.00	1,350.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.23	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.25	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 527,046	\$ 163,391	\$ 70,025	\$ 760,461
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	1,800	LF	5.30	1.43	0.29	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	450	LF	11.15	10.80	5.40	\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,308
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	725	LF	266.50	53.04	13.26	\$ 193,213	\$ 38,454	\$ 9,614	\$ 241,280
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 198,230	\$ 43,314	\$ 12,044	\$ 253,588
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,780	LF	2.09	3.42	1.46	\$ 12,086	\$ 19,740	\$ 8,460	\$ 40,287
7.2	Caweld, DSA, 4/0 , T, CROSS	160	EA	165.00	75.00		\$ 26,400	\$ 12,000	\$ -	\$ 38,400
7.3	Ground Rod, 3/4" x 15'	135	EA	135.00	67.50	7.50	\$ 18,225	\$ 9,113	\$ 1,013	\$ 28,350
TOTAL - GROUND GRID							\$ 56,711	\$ 40,853	\$ 9,473	\$ 107,037

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (Pilot): GE L90	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.7	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.8	HMI Panel	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
1 - New Rochelle 345kV Substation							\$ 2,486,281	\$ 1,650,552	\$ 1,053,122	\$ 5,189,956
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		94,628.62	40,555.12	\$ -	\$ 94,629	\$ 40,555	\$ 135,184
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		207,598.24		\$ -	\$ 207,598	\$ -	\$ 207,598
9.4	Utility PM and Project Oversight	1.0	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.5	Site Accommodation, Facilities, Storage	1.0	LS	51,899.56			\$ 51,900	\$ -	\$ -	\$ 51,900
	Engineering									
9.6	Design Engineering	1.00	LS		415,196.48		\$ -	\$ 415,196	\$ -	\$ 415,196
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		36,329.69		\$ -	\$ 36,330	\$ -	\$ 36,330
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		194,623.35		\$ -	\$ 194,623	\$ -	\$ 194,623
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.13	Environmental-special studies/investigation	-	LS	-	-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,569.87		\$ -	\$ 15,570	\$ -	\$ 15,570
9.15	Laydown Lease	-	LS	-	-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,393,162.00	\$ -	\$ -	\$ 2,393,162	\$ 2,393,162
9.17	Legal Fees (Real estate)	1.00	LS		-	71,794.86	\$ -	\$ -	\$ 71,795	\$ 71,795
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.8%	LS	2,486,281.16			\$ 218,793	\$ -	\$ -	\$ 218,793
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,189.96		\$ -	\$ 5,190	\$ -	\$ 5,190
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 270,692	\$ 1,145,032	\$ 2,774,612	\$ 4,190,336

Propel NY - TO47 BS1

2 - Shore Road 345 kV GIS Substation

Total: \$ 173,385,312

Propel NY - TO47 BS1										
	Material Supply	Labor Supply	Equip Supply	Total						
2 - Shore Road 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,369,486	\$ 11,006,431	\$ 6,581,547	\$ 19,957,464						
2. SUBSTATION FOUNDATIONS	\$ 4,214,207	\$ 3,943,270	\$ 2,685,696	\$ 10,843,173						
3. SUBSTATION STRUCTURES	\$ 203,466	\$ 118,092	\$ 78,728	\$ 400,286						
4. MAJOR EQUIPTMENT	\$ 46,865,700	\$ 7,975,536	\$ 4,565,107	\$ 59,406,343						
5. LOW VOLTAGE & CONTROL CABLE	\$ 187,532	\$ 50,711	\$ 10,142	\$ 248,384						
6. CONDUIT & CABLE TRENCH	\$ 1,055,915	\$ 635,839	\$ 322,911	\$ 2,014,665						
7. GROUND GRID	\$ 149,160	\$ 107,967	\$ 25,272	\$ 282,399						
8. CONTROL ENCLOSURE	\$ 1,382,382	\$ 1,130,634	\$ 370,748	\$ 2,883,764						
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,764,992	\$ 17,007,749	\$ 5,275,555	\$ 28,048,296						
Turnkey cost (HVDC, GIS)	\$ 8,051,143	\$ 4,830,686	\$ 3,220,457	\$ 16,102,286						
Non-Turnkey cost	\$ 54,141,696	\$ 37,145,542	\$ 16,695,250	\$ 107,982,489						
SUBTOTAL (Costs):	\$ 62,192,839	\$ 41,976,228	\$ 19,915,707	\$ 124,084,775						
CONTRACTOR MARK-UP (OH&P):	\$ 10,228,574	\$ 6,976,039	\$ 3,198,372	\$ 20,402,985						
SUBTOTAL:	\$ 72,421,413	\$ 48,952,267	\$ 23,114,080	\$ 144,487,760						
CONTINGENCY ON ENTIRE PROJECT	\$ 14,484,283	\$ 9,790,453	\$ 4,622,816	\$ 28,897,552						
TOTAL:	\$ 86,905,695	\$ 58,742,720	\$ 27,736,896	\$ 173,385,312						
Description of Work: New greenfield 345 kV Shore Road Substation, to be located at 375 Shore Road, in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. The 345 kV Shore Road Substation will serve as the transition station and new connection for the existing LIPA) 138 kV Shore Road Substation. A new 345 kV underground terrestrial transmission line will be converted into two (2) marine transmission lines for crossing Long Island Sound. Also, a 345 kV/138 kV power transformer in series with a 138 kV PAR will connect to the existing LIPA 138 kV substation. Lastly, two (2) 345 kV shunt reactors will be installed for compensation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2 - Shore Road 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 43,200	\$ 28,800	\$ 72,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,907	SY	4.85	7.20	4.80	\$ 18,948	\$ 28,130	\$ 18,753	\$ 65,831
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$ -	\$ 158,107	\$ 67,760	\$ 225,867
1.5	Site Grading- Excavation for Substation Pad	193,600	CY		13.50	9.00	\$ -	\$ 2,613,600	\$ 1,742,400	\$ 4,356,000
1.6	Site Grading- Excavation for Substation Pad- Rock	9,680	CY		243.00	162.00	\$ -	\$ 2,352,240	\$ 1,568,160	\$ 3,920,400
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	209,088	CY		21.00	9.00	\$ -	\$ 4,390,848.00	\$ 1,881,792.00	\$ 6,272,640
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	52,272	CY		2.40	1.60	\$ -	\$ 125,453	\$ 83,635	\$ 209,088
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	19,360	SY	11.00	6.00	4.00	\$ 212,960	\$ 116,160	\$ 77,440	\$ 406,560
1.12	Site Surfacing - Aggregate 6" Thick	19,360	SY	16.50	4.50	3.00	\$ 319,440	\$ 87,120	\$ 58,080	\$ 464,640
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,701	LF	13.85	13.85	6.92	\$ 23,555	\$ 23,555	\$ 11,778	\$ 58,889
1.14	25' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.15	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	488,434.80	76,800.00	76,104.00	\$ 488,435	\$ 76,800	\$ 76,104	\$ 641,339
1.17	Seeding	6,320	SF	1.50	1.50	1.00	\$ 9,480	\$ 9,480	\$ 6,320	\$ 25,280
1.18	Erosion Control-Silt fence install & remove	2,625	LF	2.41	3.16	0.72	\$ 6,326	\$ 8,295	\$ 1,890	\$ 16,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Temporary fencing	1,750	LF	7.50	5.25	2.25	\$ 13,125	\$ 9,188	\$ 3,938	\$ 26,250
1.20	Substation entrance with asphalt	808	SY	19.50	26.00	19.50	\$ 15,756	\$ 21,008	\$ 15,756	\$ 52,520
1.21	Concrete curb	110	LF	26.00	27.30	11.70	\$ 2,860	\$ 3,003	\$ 1,287	\$ 7,150
1.22	Retaining Wall	800	LF	1,560.00	1,170.00	1,170.00	\$ 1,248,000	\$ 936,000	\$ 936,000	\$ 3,120,000
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,369,486	\$ 11,006,431	\$ 6,581,547	\$ 19,957,464
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	142	CY	703.89	804.44	502.78	\$ 100,290	\$ 114,617	\$ 71,635	\$ 286,542
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.8	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.13	345kV, Shunt Reactor with oil containment-150MVAR	635	CY	703.89	804.44	502.78	\$ 446,967	\$ 510,819	\$ 319,262	\$ 1,277,049
2.14	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	353	CY	703.89	804.44	502.78	\$ 248,471	\$ 283,967	\$ 177,480	\$ 709,918
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.19	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.26	138kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.27	Firewall Foundation	380	CY	703.89	804.44	502.78	\$ 267,589	\$ 305,816	\$ 191,135	\$ 764,540
2.28	Precast Firewall for transformer, PARs, reactors	5,670	SF	25.00	15.00	10.00	\$ 141,750	\$ 85,050	\$ 56,700	\$ 283,500
2.29	Precast Concrete Piles-12"X80'	198	EA	4,800.00	3,600.00	3,600.00	\$ 950,400	\$ 712,800	\$ 712,800	\$ 2,376,000
2.29	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.30	GIS Concrete Pad	815	CY	703.89	804.44	502.78	\$ 573,666	\$ 655,619	\$ 409,762	\$ 1,639,047
2.31	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	\$ 591,165	\$ 252,972	\$ 108,416	\$ 952,553
TOTAL - 345KV FOUNDATION							\$ 4,214,207	\$ 3,943,270	\$ 2,685,696	\$ 10,843,173
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	8	EA	23,400.00	14,040.00	9,360.00	\$ 187,200	\$ 112,320	\$ 74,880	\$ 374,400
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.5	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-3 Ph	12	EA	4,810.00	2,886.00	1,924.00				\$ -
3.8	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.11	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA							
3.17	138kV, Cable sealing end	1	EA	4,066.40	1,443.00	962.00	\$ 4,066	\$ 1,443	\$ 962	\$ 6,471
3.20	138kV, Surge arrester	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.18	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 203,466	\$ 118,092	\$ 78,728	\$ 400,286
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.4	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		834,400.00	357,600.00	\$ -	\$ 834,400	\$ 357,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.9	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	\$ -	\$ 769,300	\$ 329,700	\$ 1,099,000
4.12	345kV, Phase Angle Regulator	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,341,857.17	805,114.30	536,742.87	\$ 8,051,143	\$ 4,830,686	\$ 3,220,457	\$ 16,102,286
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator	1	EA	11,902,178.00	3,520.00	880.00	\$ 11,902,178	\$ 3,520	\$ 880	\$ 11,906,578
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		701,400.00	300,600.00	\$ -	\$ 701,400	\$ 300,600	\$ 1,002,000
4.19	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300
4.21	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil		LF				\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 46,865,700	\$ 7,975,536	\$ 4,565,107	\$ 59,406,343
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	35,400	LF	5.30	1.43	0.29	\$ 187,532	\$ 50,711	\$ 10,142	\$ 248,384
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 187,532	\$ 50,711	\$ 10,142	\$ 248,384
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,000	LF	11.15	10.80	5.40	\$ 66,900	\$ 64,800	\$ 32,400	\$ 164,100
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,150	LF	266.50	53.04	13.26	\$ 306,475	\$ 60,996	\$ 15,249	\$ 382,720
6.7										
6.10	138kV UG- Conduit	1,100	LF	81.00	107.00	57.00	\$ 89,100	\$ 117,700	\$ 62,700	\$ 269,500
6.11	138kV UG- Cable	3,300	LF	156.00	94.00	62.00	\$ 514,800	\$ 310,200	\$ 204,600	\$ 1,029,600
6.12	138kV UG- Termination	6	EA	9,360.00	11,700.00		\$ 56,160	\$ 70,200	\$ -	\$ 126,360
6.13	Fiber Optic Cable	1,100	LF	7.40	3.33	2.22	\$ 8,137	\$ 3,664	\$ 2,442	\$ 14,243
6.14	Ground Continuity Conductor	1,100	LF	13.04	7.53	5.02	\$ 14,343	\$ 8,280	\$ 5,520	\$ 28,142
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,055,915	\$ 635,839	\$ 322,911	\$ 2,014,665
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,380	LF	2.09	3.42	1.46	\$ 32,160	\$ 52,527	\$ 22,512	\$ 107,199
7.2	Caweld, DSA, 4/0 , T, CROSS	408	EA	165.00	75.00		\$ 67,320	\$ 30,600	\$ -	\$ 97,920
7.3	Ground Rod, 3/4" x 15'	368	EA	135.00	67.50	7.50	\$ 49,680	\$ 24,840	\$ 2,760	\$ 77,280
TOTAL - GROUND GRID							\$ 149,160	\$ 107,967	\$ 25,272	\$ 282,399
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (Pilot): SEL-411L	4	EA	41,575.50	33,260.40	8,315.10	\$ 166,302	\$ 133,042	\$ 33,260	\$ 332,604
8.3	Backup Line Relays (Pilot): GE L90	4	EA	41,575.50	33,260.40	8,315.10	\$ 166,302	\$ 133,042	\$ 33,260	\$ 332,604
8.4	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,382,382	\$ 1,130,634	\$ 370,748	\$ 2,883,764
2 - Shore Road 345 kV GIS Substation							\$ 56,427,847	\$ 24,968,480	\$ 14,640,152	\$ 96,036,478
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,104,512.11	473,362.33	\$ -	\$ 1,104,512	\$ 473,362	\$ 1,577,874
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		799,341.92		\$ -	\$ 799,342	\$ -	\$ 799,342
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,197,367.70		\$ -	\$ 3,197,368	\$ -	\$ 3,197,368
9.4	Utility PM and Project Oversight	1.0	LS		799,341.92		\$ -	\$ 799,342	\$ -	\$ 799,342
9.5	Site Accommodation, Facilities, Storage	1.0	LS	799,341.92			\$ 799,342	\$ -	\$ -	\$ 799,342
	Engineering									
9.6	Design Engineering	1.00	LS		6,394,735.40		\$ -	\$ 6,394,735	\$ -	\$ 6,394,735
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		559,539.35		\$ -	\$ 559,539	\$ -	\$ 559,539
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,997,532.22		\$ -	\$ 2,997,532	\$ -	\$ 2,997,532
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		799,341.92		\$ -	\$ 799,342	\$ -	\$ 799,342
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		239,802.58		\$ -	\$ 239,803	\$ -	\$ 239,803
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,294,265.00	\$ -	\$ -	\$ 1,294,265	\$ 1,294,265
9.17	Legal Fees (Real estate)	1.00	LS		-	38,827.95	\$ -	\$ -	\$ 38,828	\$ 38,828
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,460,000	\$ -	\$ -	\$ 3,460,000	\$ 3,460,000
9.20	Sales Tax on Materials	8.80%	LS	56,427,846.61			\$ 4,965,651	\$ -	\$ -	\$ 4,965,651
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		96,036.48		\$ -	\$ 96,036	\$ -	\$ 96,036
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,764,992	\$ 17,007,749	\$ 5,275,555	\$ 28,048,296

Propel NY - TO47 BS1

3 - Ruland Road 345/138 kV Substation

Total:

Total: \$ 161,943,744

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS	\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES	\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960
4. MAJOR EQUIPMENT	\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH	\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID	\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE	\$ 1,433,684	\$ 1,171,676	\$ 381,008	\$ 2,986,368
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,327,783	\$ 17,796,366	\$ 4,790,929	\$ 28,915,079
SUBTOTAL (Costs):	\$ 68,523,955	\$ 33,122,286	\$ 12,720,810	\$ 114,367,051
CONTRACTOR MARK-UP (OH&P)	\$ 12,334,312	\$ 5,962,012	\$ 2,289,746	\$ 20,586,069
SUBTOTAL:	\$ 80,858,267	\$ 39,084,298	\$ 15,010,556	\$ 134,953,120
CONTINGENCY ON ENTIRE PROJECT	\$ 16,171,653	\$ 7,816,860	\$ 3,002,111	\$ 26,990,624
TOTAL:	\$ 97,029,920	\$ 46,901,157	\$ 18,012,667	\$ 161,943,744

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, to be located on Ruland Road in the Hamlet of Melville, Town of Huntington, Suffolk County. The New substation will consist of a 138 kV air insulated switchgear (“AIS”) six (6) position ring bus substation and a 345 kV AIS six (6) position ring bus substation interconnected by three (3) 345 kV/138 kV power transformers.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3 - Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.3	ACRE	-	10,800.00	7,200.00	\$ -	\$ 68,040	\$ 45,360	\$ 113,400
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,535	SY	4.85	7.20	4.80	\$ 21,995	\$ 32,653	\$ 21,769	\$ 76,417
1.4	Strip and Dispose Top Soil	10,164	CY		24.50	10.50	\$ -	\$ 249,018	\$ 106,722	\$ 355,740
1.5	Site Grading- Excavation for Substation Pad	30,492	CY		9.00	6.00	\$ -	\$ 274,428	\$ 182,952	\$ 457,380
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	16,466	CY		21.00	9.00	\$ -	\$ 345,779.28	\$ 148,191.12	\$ 493,970.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	24,699	CY		2.40	1.60	\$ -	\$ 59,276	\$ 39,518	\$ 98,794
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	16,466	CY	25.00	2.40	1.60	\$ 411,642	\$ 39,518	\$ 26,345	\$ 477,505
1.9	Blasting		EA	-			\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	30,492	SY	11.00	6.00	4.00	\$ 335,412	\$ 182,952	\$ 121,968	\$ 640,332
1.11	Site Surfacing - Aggregate 6" Thick	30,492	SY	16.50	4.50	3.00	\$ 503,118	\$ 137,214	\$ 91,476	\$ 731,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,005	LF	13.85	13.85	6.92	\$ 27,765	\$ 27,765	\$ 13,883	\$ 69,413
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	17,200	SF	1.50	1.50	1.00	\$ 25,800	\$ 25,800	\$ 17,200	\$ 68,800
1.17	Erosion Control-Silt fence install & remove	3,393	LF	2.41	3.16	0.72	\$ 8,177	\$ 10,722	\$ 2,443	\$ 21,342
1.18	Temporary fencing	2,262	LF	7.50	5.25	2.25	\$ 16,965	\$ 11,876	\$ 5,090	\$ 33,930
1.19	Substation entrance with asphalt	135	SY	19.50	26.00	19.50	\$ 2,637	\$ 3,516	\$ 2,637	\$ 8,789
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	587	CY	703.89	804.44	502.78	\$ 412,871	\$ 471,852	\$ 294,908	\$ 1,179,631
2.3	345kV, Bus support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	293	CY	703.89	804.44	502.78	\$ 206,266	\$ 235,733	\$ 147,333	\$ 589,333
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.11	345kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.12	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	27	CY	703.89	804.44	502.78	\$ 18,770	\$ 21,452	\$ 13,407	\$ 53,629
2.22	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.23	138kV, Bus support-1 Ph, low	110	CY	703.89	804.44	502.78	\$ 77,160	\$ 88,183	\$ 55,114	\$ 220,457
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.26	138kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.27	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.28	Firewall Foundation	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.29	Precast Firewall for transformer, PARs, reactors	1,200	SF	25.00	15.00	10.00	\$ 30,000	\$ 18,000	\$ 12,000	\$ 60,000
2.30	Precast Concrete Piles-12"X80'	212	EA	18,000.00	3,200.00	2,800.00	\$ 3,816,000	\$ 678,400	\$ 593,600	\$ 5,088,000
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - 345KV FOUNDATION							\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'	4	EA	48,100.00	28,860.00	19,240.00	\$ 192,400	\$ 115,440	\$ 76,960	\$ 384,800
3.3	345kV, Bus support-3 Ph	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	37	EA	4,810.00	2,886.00	1,924.00	\$ 177,970	\$ 106,782	\$ 71,188	\$ 355,940
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.11	345kV, CCVT	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.12	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	27	EA	2,782.00	1,919.84	1,279.89	\$ 75,114	\$ 51,836	\$ 34,557	\$ 161,507
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.17	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.18	138kV, A Frame 50'	3	EA	33,000.00	19,800.00	13,200.00	\$ 99,000	\$ 59,400	\$ 39,600	\$ 198,000
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	2,850	LF	25.00	184.94	123.29	\$ 71,250	\$ 527,073	\$ 351,382	\$ 949,706
3.22	AL. Bus fittings	1	LS	85,500.00	85,500.00	42,750.00	\$ 85,500	\$ 85,500	\$ 42,750	\$ 213,750
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.4	345kV, CCVT	18	EA	16,900.00	15,941.99	6,832.28	\$ 304,200	\$ 286,956	\$ 122,981	\$ 714,137
4.5	345kV, Disconnect Switch	2	EA	68,900.00	21,703.50	9,301.50	\$ 137,800	\$ 43,407	\$ 18,603	\$ 199,810
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.7	Transport & Testing- Transformer	3	EA		834,400.00	357,600.00	\$ -	\$ 2,503,200	\$ 1,072,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	2	EA	2,901,774.00	3,520.00	880.00	\$ 5,803,548	\$ 7,040	\$ 1,760	\$ 5,812,348

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	\$ -	\$ 769,300	\$ 329,700	\$ 1,099,000
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	16,086,712.00	3,520.00	880.00	\$ 16,086,712	\$ 3,520	\$ 880	\$ 16,091,112
4.12	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.13	345kV, Circuit Breaker (PASS)	8	EA	980,000.00	57,239.00	24,531.00	\$ 7,840,000	\$ 457,912	\$ 196,248	\$ 8,494,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	\$ 50,700	\$ 32,760	\$ 14,040	\$ 97,500
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker (PASS)	6	EA	510,000.00	13,559.00	5,811.00	\$ 3,060,000	\$ 81,354	\$ 34,866	\$ 3,176,220
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.22	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	\$ 180,000	\$ 143,462	\$ 61,484	\$ 384,945
4.23	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	114,000	LF	5.30	1.43	0.29	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	22,500	LF	11.15	10.80	5.40	\$ 250,875	\$ 243,000	\$ 121,500	\$ 615,375
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	601	LF	266.50	53.04	13.26	\$ 160,167	\$ 31,877	\$ 7,969	\$ 200,013
6.7										
6.8	138kV UG- Conduit	1,775	LF	81.00	107.00	57.00	\$ 143,775	\$ 189,925	\$ 101,175	\$ 434,875
6.9	138kV UG- Cable	6,325	LF	156.00	94.00	62.00	\$ 986,700	\$ 594,550	\$ 392,150	\$ 1,973,400
6.10	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.11	Fiber Optic Cable	1,775	LF	7.40	3.33	2.22	\$ 13,130	\$ 5,912	\$ 3,941	\$ 22,983
6.12	Ground Continuity Conductor	1,775	LF	13.04	7.53	5.02	\$ 23,144	\$ 13,360	\$ 8,907	\$ 45,412
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,334	LF	2.09	3.42	1.46	\$ 61,337	\$ 100,184	\$ 42,936	\$ 204,458
7.2	Caweld, DSA, 4/0 , T, CROSS	780	EA	165.00	75.00		\$ 128,700	\$ 58,500	\$ -	\$ 187,200
7.3	Ground Rod, 3/4" x 15'	722	EA	135.00	67.50	7.50	\$ 97,470	\$ 48,735	\$ 5,415	\$ 151,620
TOTAL - GROUND GRID							\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.5	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,433,684	\$ 1,171,676	\$ 381,008	\$ 2,986,368
3 - Ruland Road 345/138 kV Substation							\$ 62,196,172	\$ 15,325,920	\$ 7,929,881	\$ 85,451,972
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		813,953.01	348,837.01	\$ -	\$ 813,953	\$ 348,837	\$ 1,162,790
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,418,078.90		\$ -	\$ 3,418,079	\$ -	\$ 3,418,079
9.4	Utility PM and Project Oversight	1.0	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.5	Site Accommodation, Facilities, Storage	1.0	LS	854,519.72			\$ 854,520	\$ -	\$ -	\$ 854,520
	Engineering									
9.6	Design Engineering	1.00	LS		6,836,157.79		\$ -	\$ 6,836,158	\$ -	\$ 6,836,158
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		598,163.81		\$ -	\$ 598,164	\$ -	\$ 598,164
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,204,448.97		\$ -	\$ 3,204,449	\$ -	\$ 3,204,449
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		256,355.92		\$ -	\$ 256,356	\$ -	\$ 256,356
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,240,000	\$ -	\$ -	\$ 3,240,000	\$ 3,240,000
9.20	Sales Tax on Materials	8.80%	LS	62,196,172.06			\$ 5,473,263	\$ -	\$ -	\$ 5,473,263
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		85,451.97		\$ -	\$ 85,452	\$ -	\$ 85,452
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,327,783	\$ 17,796,366	\$ 4,790,929	\$ 28,915,079

Propel NY - TO47 BS1

4 - Barrett 345 kV Substation

Total: \$ 117,075,074

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
4 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 906,787	\$ 966,999	\$ 543,829	\$ 2,417,615
2. SUBSTATION FOUNDATIONS	\$ 4,579,333	\$ 2,166,036	\$ 1,453,545	\$ 8,198,913
3. SUBSTATION STRUCTURES	\$ 266,997	\$ 258,797	\$ 169,476	\$ 695,270
4. MAJOR EQUIPMENT	\$ 36,428,028	\$ 3,794,774	\$ 1,623,189	\$ 41,845,990
5. LOW VOLTAGE & CONTROL CABLE	\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
6. CONDUIT & CABLE TRENCH	\$ 190,409	\$ 86,807	\$ 37,092	\$ 314,308
7. GROUND GRID	\$ 121,722	\$ 87,561	\$ 20,297	\$ 229,580
8. CONTROL ENCLOSURE	\$ 1,050,255	\$ 873,416	\$ 295,839	\$ 2,219,510
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,407,133	\$ 15,072,359	\$ 7,068,965	\$ 26,548,456
SUBTOTAL (Costs):	\$ 48,109,587	\$ 23,349,723	\$ 11,220,828	\$ 82,680,137
CONTRACTOR MARK-UP (OH&P)	\$ 8,659,726	\$ 4,202,950	\$ 2,019,749	\$ 14,882,425
SUBTOTAL:	\$ 56,769,313	\$ 27,552,673	\$ 13,240,577	\$ 97,562,562
CONTINGENCY ON ENTIRE PROJECT	\$ 11,353,863	\$ 5,510,535	\$ 2,648,115	\$ 19,512,512
TOTAL:	\$ 68,123,175	\$ 33,063,207	\$ 15,888,692	\$ 117,075,074

Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of Hempstead, Nassau County. The New 345 kV Barrett Substation will serve as the main Point of Interconnection (“POI”)between the generation and transmission operator. The New substation will step up the 138 kV POI voltage to 345 kV, and a new 345 kV underground line will be connected

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 43,200	\$ 28,800	\$ 72,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,053	SY	4.85	7.20	4.80	\$ 14,807	\$ 21,982	\$ 14,654	\$ 51,443
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$ -	\$ 158,107	\$ 67,760	\$ 225,867
1.5	Site Grading- Excavation for Substation Pad	19,360	CY		9.00	6.00	\$ -	\$ 174,240	\$ 116,160	\$ 290,400
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	10,454	CY		21.00	9.00	\$ -	\$ 219,542.40	\$ 94,089.60	\$ 313,632.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	15,682	CY		2.40	1.60	\$ -	\$ 37,636	\$ 25,091	\$ 62,726
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	10,454	CY	25.00	2.40	1.60	\$ 261,360	\$ 25,091	\$ 16,727	\$ 303,178
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	19,360	SY	11.00	6.00	4.00	\$ 212,960	\$ 116,160	\$ 77,440	\$ 406,560
1.11	Site Surfacing - Aggregate 6" Thick	19,360	SY	16.50	4.50	3.00	\$ 319,440	\$ 87,120	\$ 58,080	\$ 464,640
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,286	LF	13.85	13.85	6.92	\$ 17,809	\$ 17,809	\$ 8,904	\$ 44,521
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH AND INLET	2	EA	11,160.00	9,600.00	6,342.00	\$ 22,320	\$ 19,200	\$ 12,684	\$ 54,204
1.16	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.17	Erosion Control-Silt fence install & remove	2,481	LF	2.41	3.16	0.72	\$ 5,979	\$ 7,840	\$ 1,786	\$ 15,605
1.18	Temporary fencing	1,654	LF	7.50	5.25	2.25	\$ 12,405	\$ 8,684	\$ 3,722	\$ 24,810
1.19	Substation entrance with asphalt	490	SY	19.50	26.00	19.50	\$ 9,555	\$ 12,740	\$ 9,555	\$ 31,850
1.20	Concrete curb	160	LF	26.00	27.30	11.70	\$ 4,160	\$ 4,368	\$ 1,872	\$ 10,400
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 906,787	\$ 966,999	\$ 543,829	\$ 2,417,615
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	71	CY	703.89	804.44	502.78	\$ 50,145	\$ 57,308	\$ 35,818	\$ 143,271
2.2	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.3	345kV, Bus support-1 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.4	345kV, Cable sealing end	18	CY	703.89	804.44	502.78	\$ 12,797	\$ 14,625	\$ 9,140	\$ 36,562

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.6	345/138KV, Power Transformer with oil containment	550	CY	703.89	804.44	502.78	\$ 387,137	\$ 442,442	\$ 276,526	\$ 1,106,105
2.7	345kV, Shunt Reactor with oil containment	275	CY	703.89	804.44	502.78	\$ 193,568	\$ 221,221	\$ 138,263	\$ 553,053
2.8	345kV, Circuit Breaker (PASS)	60	CY	703.89	804.44	502.78	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
2.9	345/138 Kv, Control Enclosure-BLDG with generator pad	138	CY	703.89	804.44	502.78	\$ 97,136	\$ 111,013	\$ 69,383	\$ 277,532
2.10	138kV, Phase Angle Regulator	294	CY	703.89	804.44	502.78	\$ 206,942	\$ 236,505	\$ 147,816	\$ 591,263
2.11	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.12	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.13	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.14	Precast Firewall for transformer	5,100	SF	25.00	15.00	10.00	\$ 127,500	\$ 76,500	\$ 51,000	\$ 255,000
2.15	Precast Concrete Piles-12"x80'	158	EA	18,000.00	3,200.00	2,800.00	\$ 2,844,000	\$ 505,600	\$ 442,400	\$ 3,792,000
2.16	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 4,579,333	\$ 2,166,036	\$ 1,453,545	\$ 8,198,913
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast- 90'	4	EA	23,400.00	14,040.00	9,360.00	\$ 93,600	\$ 56,160	\$ 37,440	\$ 187,200
3.2	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.3	345kV, Bus support-1 Ph	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.4	345kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.5	345kV, CCVT	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.6	138kV, Disconnect Switch	2	EA	12,251.20	3,928.86	2,619.24	\$ 24,502	\$ 7,858	\$ 5,238	\$ 37,599
3.7	138kV, Cable sealing end	2	EA	4,066.40	1,443.00	962.00	\$ 8,133	\$ 2,886	\$ 1,924	\$ 12,943
3.8	AL Bus Tubing, 5" SCH 80	611	LF	25.00	184.94	123.29	\$ 15,275	\$ 112,997	\$ 75,331	\$ 203,604
3.9	AL Bus fittings	1	LS	18,330.00	18,330.00	9,165.00	\$ 18,330	\$ 18,330	\$ 9,165	\$ 45,825
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 266,997	\$ 258,797	\$ 169,476	\$ 695,270
4. MAJOR EQUIPMENT										
4.1	345/138kV, Power Transformer	2	EA	4,420,000.00	3,520.00	880.00	\$ 8,840,000	\$ 7,040	\$ 1,760	\$ 8,848,800
4.2	Transport & Testing- Transformer	2	EA		834,400.00	357,600.00	\$ -	\$ 1,668,800	\$ 715,200	\$ 2,384,000
4.3	Shunt Reactor, 345kV	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264
4.4	Transport & Testing- Shunt Reactor	1	EA		323,400.00	138,600.00	\$ -	\$ 323,400	\$ 138,600	\$ 462,000
4.5	345kV Circuit Breakers, PASS	3	EA	980,000.00	57,239.00	24,531.00	\$ 2,940,000	\$ 171,717	\$ 73,593	\$ 3,185,310
4.6	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.7	345kV, CCVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.8	345kV, Surge arrester	3	EA	8,450.00	4,200.00	1,800.00	\$ 25,350	\$ 12,600	\$ 5,400	\$ 43,350
4.9	Phase Angle Regulating Transformer, 138kV	2	EA	10,713,172.00	3,520.00	880.00	\$ 21,426,344	\$ 7,040	\$ 1,760	\$ 21,435,144
4.10	Transport & Testing- Phase Angle Regulating Transformer, 138kV	2	EA		701,400.00	300,600.00	\$ -	\$ 1,402,800	\$ 601,200	\$ 2,004,000
4.11	138kV, Cable sealing end	6	EA	11,600.00	1,050.00	450.00	\$ 69,600	\$ 6,300	\$ 2,700	\$ 78,600
4.12	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.13	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.14	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 36,428,028	\$ 3,794,774	\$ 1,623,189	\$ 41,845,990
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	30,000	LF	5.30	1.43	0.29	\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,700	LF	11.15	10.80	5.40	\$ 63,555	\$ 61,560	\$ 30,780	\$ 155,895
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	476	LF	266.50	53.04	13.26	\$ 126,854	\$ 25,247	\$ 6,312	\$ 158,413
6.7							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 190,409	\$ 86,807	\$ 37,092	\$ 314,308
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,330	LF	2.09	3.42	1.46	\$ 25,782	\$ 42,111	\$ 18,047	\$ 85,940
7.2	Caweld, DSA, 4/0 , T, CROSS	336	EA	165.00	75.00		\$ 55,440	\$ 25,200	\$ -	\$ 80,640
7.3	Ground Rod, 3/4" x 15'	300	EA	135.00	67.50	7.50	\$ 40,500	\$ 20,250	\$ 2,250	\$ 63,000
TOTAL - GROUND GRID							\$ 121,722	\$ 87,561	\$ 20,297	\$ 229,580
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	190,880.15	133,616.11	57,264.05	\$ 190,880	\$ 133,616	\$ 57,264	\$ 381,760
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,050,255	\$ 873,416	\$ 295,839	\$ 2,219,510
4 - Barrett 345 kV Substation							\$ 43,702,454	\$ 8,277,364	\$ 4,151,863	\$ 56,131,681
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		435,022.94	186,438.40	\$ -	\$ 435,023	\$ 186,438	\$ 621,461
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,245,267.24		\$ -	\$ 2,245,267	\$ -	\$ 2,245,267
9.4	Utility PM and Project Oversight	1.0	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.5	Site Accommodation, Facilities, Storage	1.0	LS	561,316.81			\$ 561,317	\$ -	\$ -	\$ 561,317
	Engineering									
9.6	Design Engineering	1.00	LS		4,490,534.48		\$ -	\$ 4,490,534	\$ -	\$ 4,490,534
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		392,921.77		\$ -	\$ 392,922	\$ -	\$ 392,922
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,104,938.04		\$ -	\$ 2,104,938	\$ -	\$ 2,104,938
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.13	Environmental-special studies/investigation	1.00	LS		3,475,000.00		\$ -	\$ 3,475,000	\$ -	\$ 3,475,000
9.14	Warranties / LOC's	1.00	LS		168,395.04		\$ -	\$ 168,395	\$ -	\$ 168,395
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			4,401,385.00	\$ -	\$ -	\$ 4,401,385	\$ 4,401,385
9.17	Legal Fees (Real estate)	1.00	LS		-	132,041.55	\$ -	\$ -	\$ 132,042	\$ 132,042
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,340,000	\$ -	\$ -	\$ 2,340,000	\$ 2,340,000
9.20	Sales Tax on Materials	8.80%	LS	43,702,454.27			\$ 3,845,816	\$ -	\$ -	\$ 3,845,816
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		56,131.68		\$ -	\$ 56,132	\$ -	\$ 56,132
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,407,133	\$ 15,072,359	\$ 7,068,965	\$ 26,548,456

Propel NY - TO47 BS1

5 - Existing 345 kV Tremont Substation GIS Interconnection

Total: \$ 32,771,373

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Existing 345 kV Tremont Substation_GIS_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS	\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH	\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID	\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE	\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283
Turnkey cost (HVDC, GIS)	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
Non-Turnkey cost	\$ 4,776,525	\$ 3,457,247	\$ 1,770,071	\$ 10,003,843
SUBTOTAL (Costs):	\$ 12,090,177	\$ 7,845,439	\$ 4,695,532	\$ 24,631,147
CONTRACTOR MARK-UP (OH&P):	\$ 1,298,594	\$ 885,596	\$ 494,140	\$ 2,678,330
SUBTOTAL:	\$ 13,388,771	\$ 8,731,035	\$ 5,189,672	\$ 27,309,477
CONTINGENCY ON ENTIRE PROJECT	\$ 2,677,754	\$ 1,746,207	\$ 1,037,934	\$ 5,461,895
TOTAL:	\$ 16,066,525	\$ 10,477,241	\$ 6,227,606	\$ 32,771,373

Description of Work:The existing Consolidated Edison Company of New York, Inc. (“Con Edison”) Tremont Substation, located in the Borough of the Bronx, New York City, Bronx County. Tremont Substation is an existing 345 kV AIS substation fed by a single underground 345 kV Line, X-28, which is a Con Edison transmission circuit. The X-28 circuit is connected to a common rigid bus that feeds two (2) 345 kV / 138 kV transformers in parallel. The Solution consists of the termination of a new 345 kV circuit, which requires installing a new 345 kV GIS six-position ring bus within the existing fence-line of the substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Existing 345 kV Tremont Substation_GIS_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	825	LF	2.41	3.16	0.72	\$ 1,988	\$ 2,607	\$ 594	\$ 5,189
1.18	Temporary fencing	300	LF	7.50	5.25	2.25	\$ 2,250	\$ 1,575	\$ 675	\$ 4,500
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.8	345kV, GIS to air bushing	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.9	345kV, GIS support-1 Ph	45	CY	703.89	804.44	502.78	\$ 31,436	\$ 35,926	\$ 22,454	\$ 89,816
2.10	345kV, GIS support-3 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.11	345kV, GIS Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	125	CY	703.89	804.44	502.78	\$ 87,986	\$ 100,555	\$ 62,847	\$ 251,388
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	93	EA	18,000.00	3,200.00	2,800.00	\$ 1,674,000	\$ 297,600	\$ 260,400	\$ 2,232,000
2.33	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	12	EA	8,346.00	5,758.74	3,839.16			\$ -	\$ -
3.8	345kV, GIS to air bushing	9	EA	4,810.00	2,886.00	1,924.00			\$ -	\$ -
3.9	345kV, GIS support-1 Ph	11	EA	4,810.00	2,886.00	1,924.00			\$ -	\$ -
3.10	345kV, GIS support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16			\$ -	\$ -
3.11	345kV, GIS Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16			\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.5	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.6	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,218,942.00	731,365.20	487,576.80	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
4.13	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.15	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.16	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	23,400	LF	5.30	1.43	0.29	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,452	LF	2.09	3.42	1.46	\$ 3,036	\$ 4,959	\$ 2,125	\$ 10,120
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	171,028.62	119,720.03	51,308.59	\$ 171,029	\$ 119,720	\$ 51,309	\$ 342,057
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
5 - Existing 345 kV Tremont Substation_GIS_Interconnection							\$ 11,049,919	\$ 6,363,269	\$ 4,000,677	\$ 21,413,864
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		106,760.29	45,754.41	\$ -	\$ 106,760	\$ 45,754	\$ 152,515

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		271,462.42		\$ -	\$ 271,462	\$ -	\$ 271,462
9.4	Utility PM and Project Oversight	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.5	Site Accommodation, Facilities, Storage	1.0	LS	67,865.60			\$ 67,866	\$ -	\$ -	\$ 67,866
	Engineering									
9.6	Design Engineering	1.00	LS		542,924.84		\$ -	\$ 542,925	\$ -	\$ 542,925
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		47,505.92		\$ -	\$ 47,506	\$ -	\$ 47,506
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		254,496.02		\$ -	\$ 254,496	\$ -	\$ 254,496
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		20,359.68		\$ -	\$ 20,360	\$ -	\$ 20,360
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			83,963.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	2,518.89	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 640,000	\$ -	\$ -	\$ 640,000	\$ 640,000
9.20	Sales Tax on Materials	8.80%	LS	11,049,918.55			\$ 972,393	\$ -	\$ -	\$ 972,393
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		21,413.86		\$ -	\$ 21,414	\$ -	\$ 21,414
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283

Propel NY - TO47 BS1

6 - Existing Sprain Brook 345 kV Interconnection

Total: \$ 18,474,373

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
6 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 220,337	\$ 164,274	\$ 94,817	\$ 479,428
2. SUBSTATION FOUNDATIONS	\$ 1,177,446	\$ 706,038	\$ 455,635	\$ 2,339,119
3. SUBSTATION STRUCTURES	\$ 238,253	\$ 334,356	\$ 217,809	\$ 790,418
4. MAJOR EQUIPMENT	\$ 4,510,308	\$ 702,685	\$ 333,505	\$ 5,546,498
5. LOW VOLTAGE & CONTROL CABLE	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH	\$ 96,730	\$ 42,420	\$ 17,895	\$ 157,045
7. GROUND GRID	\$ 8,890	\$ 6,320	\$ 1,423	\$ 16,634
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 674,866	\$ 2,087,989	\$ 418,859	\$ 3,181,714
SUBTOTAL (Costs):	\$ 7,222,751	\$ 4,237,053	\$ 1,587,069	\$ 13,046,874
CONTRACTOR MARK-UP (OH&P)	\$ 1,300,095	\$ 762,670	\$ 285,672	\$ 2,348,437
SUBTOTAL:	\$ 8,522,846	\$ 4,999,723	\$ 1,872,742	\$ 15,395,311
CONTINGENCY ON ENTIRE PROJECT	\$ 1,704,569	\$ 999,945	\$ 374,548	\$ 3,079,062
TOTAL:	\$ 10,227,415	\$ 5,999,667	\$ 2,247,290	\$ 18,474,373

Description of Work:Interconnection Facilities to the existing Con Edison Sprain Brook Substation, located in the City of Yonkers, Westchester County. Sprain Brook Substation is an existing 345 kV AIS substation with a BAAH configuration.The Solution includes installing a new underground 345 kV line with a shunt reactor in new bay positions.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing Sprain Brook 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.4	ACRE	-	10,800.00	7,200.00	\$ -	\$ 4,320	\$ 2,880	\$ 7,200
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	481	SY	4.85	7.20	4.80	\$ 2,333	\$ 3,464	\$ 2,309	\$ 8,107
1.4	Strip and Dispose Top Soil	645	CY		24.50	10.50	\$ -	\$ 15,811	\$ 6,776	\$ 22,587
1.5	Site Grading- Excavation for Substation Pad	1,936	CY		9.00	6.00	\$ -	\$ 17,424	\$ 11,616	\$ 29,040
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,045	CY		21.00	9.00	\$ -	\$ 21,954.24	\$ 9,408.96	\$ 31,363.20
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,568	CY		2.40	1.60	\$ -	\$ 3,764	\$ 2,509	\$ 6,273
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,045	CY	25.00	2.40	1.60	\$ 26,136	\$ 2,509	\$ 1,673	\$ 30,318
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	1,936	SY	11.00	6.00	4.00	\$ 21,296	\$ 11,616	\$ 7,744	\$ 40,656
1.11	Site Surfacing - Aggregate 6" Thick	1,936	SY	16.50	4.50	3.00	\$ 31,944	\$ 8,712	\$ 5,808	\$ 46,464
1.12	7' Station Fence w/ Barbed Wire & Grounding	450	LF	13.85	13.85	6.92	\$ 6,232	\$ 6,232	\$ 3,116	\$ 15,579
1.13	40' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines	1	LS	89,529.60	38,400.00	18,120.00	\$ 89,530	\$ 38,400	\$ 18,120	\$ 146,050
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	146	LF	156.00	117.00	117.00	\$ 22,776	\$ 17,082	\$ 17,082	\$ 56,940
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 220,337	\$ 164,274	\$ 94,817	\$ 479,428
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	66	CY	703.89	804.44	502.78	\$ 46,710	\$ 53,383	\$ 33,364	\$ 133,457
2.5	345kV, Bus support-1 Ph	16	CY	703.89	804.44	502.78	\$ 11,150	\$ 12,742	\$ 7,964	\$ 31,856
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	127	CY	703.89	804.44	502.78	\$ 89,196	\$ 101,939	\$ 63,712	\$ 254,847
2.15	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, IPO circuit breaker	93	CY	703.89	804.44	502.78	\$ 65,696	\$ 75,081	\$ 46,926	\$ 187,703
2.22	345kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	24	EA	18,000.00	3,200.00	2,800.00	\$ 432,000	\$ 76,800	\$ 67,200	\$ 576,000
2.35	Precast Concrete Piles-18"X40'	12	EA	12,000.00	2,200.00	1,800.00	\$ 144,000	\$ 26,400	\$ 21,600	\$ 192,000
2.36	Local Control Cabinet foundation	1	CY	703.89	804.44	502.78	\$ 521	\$ 596	\$ 372	\$ 1,490
2.37	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - 345KV FOUNDATION							\$ 1,177,446	\$ 706,038	\$ 455,635	\$ 2,339,119
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.5	345kV, Bus support-1 Ph	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	4	EA	19,240.00	11,544.00	7,696.00	\$ 76,960	\$ 46,176	\$ 30,784	\$ 153,920
3.15	345kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80	1,019	LF	25.00	184.94	123.29	\$ 25,475	\$ 188,452	\$ 125,635	\$ 339,561
3.25	AL. Bus fittings	1	LS	30,570.00	30,570.00	15,285.00	\$ 30,570	\$ 30,570	\$ 15,285	\$ 76,425
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 238,253	\$ 334,356	\$ 217,809	\$ 790,418
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	4	EA	57,720.00	34,632.00	23,088.00	\$ 230,880	\$ 138,528	\$ 92,352	\$ 461,760
4.8	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	1	EA		323,400.00	138,600.00	\$ -	\$ 323,400	\$ 138,600	\$ 462,000
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	1	EA	980,000.00	57,239.00	24,531.00	\$ 980,000	\$ 57,239	\$ 24,531	\$ 1,061,770
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.18	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	\$ 50,700	\$ 32,760	\$ 14,040	\$ 97,500
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil	0	LF	5.30	1.61	0.40	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 4,510,308	\$ 702,685	\$ 333,505	\$ 5,546,498
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,700	LF	11.15	10.80	5.40	\$ 30,105	\$ 29,160	\$ 14,580	\$ 73,845
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 96,730	\$ 42,420	\$ 17,895	\$ 157,045
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	880	LF	2.09	3.42	1.46	\$ 1,840	\$ 3,005	\$ 1,288	\$ 6,134
7.2	Caweld, DSA, 4/0 , T, CROSS	28	EA	165.00	75.00		\$ 4,620	\$ 2,100	\$ -	\$ 6,720
7.3	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,430	\$ 1,215	\$ 135	\$ 3,780
TOTAL - GROUND GRID							\$ 8,890	\$ 6,320	\$ 1,423	\$ 16,634
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
6 - Existing Sprain Brook 345 kV_ Interconnection							\$ 6,547,886	\$ 2,149,064	\$ 1,168,210	\$ 9,865,160
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		116,104.61	49,759.12	\$ -	\$ 116,105	\$ 49,759	\$ 165,864
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		98,651.60		\$ -	\$ 98,652	\$ -	\$ 98,652

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		394,606.40		\$ -	\$ 394,606	\$ -	\$ 394,606
9.4	Utility PM and Project Oversight	1.0	LS		98,651.60		\$ -	\$ 98,652	\$ -	\$ 98,652
9.5	Site Accommodation, Facilities, Storage	1.0	LS	98,651.60			\$ 98,652	\$ -	\$ -	\$ 98,652
	Engineering									
9.6	Design Engineering	1.00	LS		789,212.81		\$ -	\$ 789,213	\$ -	\$ 789,213
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		69,056.12		\$ -	\$ 69,056	\$ -	\$ 69,056
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		369,943.50		\$ -	\$ 369,944	\$ -	\$ 369,944
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		98,651.60		\$ -	\$ 98,652	\$ -	\$ 98,652
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		29,595.48		\$ -	\$ 29,595	\$ -	\$ 29,595
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			822,958.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	24,688.74	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 360,000	\$ -	\$ -	\$ 360,000	\$ 360,000
9.20	Sales Tax on Materials	8.80%	LS	6,547,885.51			\$ 576,214	\$ -	\$ -	\$ 576,214
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,865.16		\$ -	\$ 9,865	\$ -	\$ 9,865
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 674,866	\$ 2,087,989	\$ 418,859	\$ 3,181,714

Propel NY - TO47 BS1

7 - Existing Ruland 138 kV Upgrade & Interconnection

Total: \$ 9,339,029

Propel NY - TO47 BS1										
		Material Supply	Labor Supply	Equip Supply	Total					
7 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL		\$ 128,372	\$ 144,027	\$ 80,858	\$ 353,257					
2. SUBSTATION FOUNDATIONS		\$ 552,928	\$ 423,460	\$ 274,263	\$ 1,250,651					
3. SUBSTATION STRUCTURES		\$ 160,564	\$ 121,039	\$ 114,383	\$ 395,986					
4. MAJOR EQUIPTMENT		\$ 1,478,428	\$ 194,390	\$ 81,596	\$ 1,754,413					
5. LOW VOLTAGE & CONTROL CABLE		\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717					
6. CONDUIT & CABLE TRENCH		\$ 322,346	\$ 213,089	\$ 100,110	\$ 635,545					
7. GROUND GRID		\$ 62,882	\$ 45,524	\$ 10,639	\$ 119,045					
8. CONTROL ENCLOSURE		\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250					
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 311,900	\$ 1,073,391	\$ 225,205	\$ 1,610,496					
SUBTOTAL (Costs):		\$ 3,289,756	\$ 2,378,925	\$ 926,678	\$ 6,595,359					
CONTRACTOR MARK-UP (OH&P)		\$ 592,156	\$ 428,207	\$ 166,802	\$ 1,187,165					
SUBTOTAL:		\$ 3,881,912	\$ 2,807,132	\$ 1,093,480	\$ 7,782,524					
CONTINGENCY ON ENTIRE PROJECT		\$ 776,382	\$ 561,426	\$ 218,696	\$ 1,556,505					
TOTAL:		\$ 4,658,294	\$ 3,368,558	\$ 1,312,176	\$ 9,339,029					

Description of Work: Upgrades and Potential Interconnection Facilities to the existing LIPA Ruland Road Substation, located in the Hamlet of Melville, Town of Huntington, Suffolk County. Ruland Road Substation is an existing 138 kV AIS substation configured with six (6) BAAH bays. The Solution includes installing two (2) air core reactors in series to the 138 kV Lines 138-561 and 138-562, respectively, which are proposed as Upgrades and two (2) 138 kV circuit breakers, which are proposed as Potential Interconnection Facilities

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 6,480	\$ 4,320	\$ 10,800
1.2	Demolition	1	LS	-	4,800.00	3,200.00	\$ -	\$ 4,800	\$ 3,200	\$ 8,000
1.3	New Access Road - 20'	489	SY	4.85	7.20	4.80	\$ 2,371	\$ 3,520	\$ 2,347	\$ 8,238
1.4	Strip and Dispose Top Soil	968	CY		24.50	10.50	\$ -	\$ 23,716	\$ 10,164	\$ 33,880
1.5	Site Grading- Excavation for Substation Pad	2,904	CY		9.00	6.00	\$ -	\$ 26,136	\$ 17,424	\$ 43,560
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,568	CY		21.00	9.00	\$ -	\$ 32,931.36	\$ 14,113.44	\$ 47,044.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,352	CY		2.40	1.60	\$ -	\$ 5,645	\$ 3,764	\$ 9,409
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,568	CY	25.00	2.40	1.60	\$ 39,204	\$ 3,764	\$ 2,509	\$ 45,477
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	2,904	SY	11.00	6.00	4.00	\$ 31,944	\$ 17,424	\$ 11,616	\$ 60,984
1.11	Site Surfacing - Aggregate 6" Thick	2,904	SY	16.50	4.50	3.00	\$ 47,916	\$ 13,068	\$ 8,712	\$ 69,696
1.12	7' Station Fence w/ Barbed Wire & Grounding	220	LF	13.85	13.85	6.92	\$ 3,047	\$ 3,047	\$ 1,523	\$ 7,616
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 128,372	\$ 144,027	\$ 80,858	\$ 353,257
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	\$ 116,803	\$ 133,489	\$ 83,430	\$ 333,722
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	\$ 102,429	\$ 117,062	\$ 73,164	\$ 292,655
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 552,928	\$ 423,460	\$ 274,263	\$ 1,250,651
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	\$ 85,800	\$ 51,480	\$ 68,640	\$ 205,920
3.23	AL. Bus Tubing, 5" SCH 80	126	LF	25.00	184.94	123.29	\$ 3,150	\$ 23,302	\$ 15,535	\$ 41,987
3.24	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	\$ 3,780	\$ 3,780	\$ 1,890	\$ 9,450
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 160,564	\$ 121,039	\$ 114,383	\$ 395,986
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	6	EA	10,000.00	7,970.08	3,415.75	\$ 60,000	\$ 47,821	\$ 20,495	\$ 128,315
4.24	138kV, Air core reactors (3 Ph)	6	EA	40,500.00	6,500.00	2,500.00	\$ 243,000	\$ 39,000	\$ 15,000	\$ 297,000
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,478,428	\$ 194,390	\$ 81,596	\$ 1,754,413
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	19,200	LF	5.30	1.43	0.29	\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,900	LF	11.15	10.80	5.40	\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	300	LF	266.50	53.04	13.26	\$ 79,950	\$ 15,912	\$ 3,978	\$ 99,840
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.9	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.12	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
TOTAL - CONDUIT & CABLE TRENCH							\$ 322,346	\$ 213,089	\$ 100,110	\$ 635,545
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,500	LF	2.09	3.42	1.46	\$ 13,592	\$ 22,199	\$ 9,514	\$ 45,305
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		\$ 29,040	\$ 13,200	\$ -	\$ 42,240
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	\$ 20,250	\$ 10,125	\$ 1,125	\$ 31,500
TOTAL - GROUND GRID							\$ 62,882	\$ 45,524	\$ 10,639	\$ 119,045
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
7 - Existing Ruland 138 kV_ Upgrade & Interconnection							\$ 2,977,856	\$ 1,305,534	\$ 701,473	\$ 4,984,863
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		70,245.26	30,105.11	\$ -	\$ 70,245	\$ 30,105	\$ 100,350
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		199,394.54		\$ -	\$ 199,395	\$ -	\$ 199,395
9.4	Utility PM and Project Oversight	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.5	Site Accommodation, Facilities, Storage	1.0	LS	49,848.63			\$ 49,849	\$ -	\$ -	\$ 49,849
	Engineering									
9.6	Design Engineering	1.00	LS		398,789.08		\$ -	\$ 398,789	\$ -	\$ 398,789
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		34,894.04		\$ -	\$ 34,894	\$ -	\$ 34,894
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		186,932.38		\$ -	\$ 186,932	\$ -	\$ 186,932
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		14,954.59		\$ -	\$ 14,955	\$ -	\$ 14,955
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	51,052.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	1,531.56	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 186,000	\$ -	\$ -	\$ 186,000	\$ 186,000
9.20	Sales Tax on Materials	8.80%	LS	2,977,855.99			\$ 262,051	\$ -	\$ -	\$ 262,051
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,984.86		\$ -	\$ 4,985	\$ -	\$ 4,985
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 311,900	\$ 1,073,391	\$ 225,205	\$ 1,610,496

Propel NY - TO47 BS1

8 -Existing Shore Road 138 kV Interconnection

Total: Total: \$ 9,364,722

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
8 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 462,623	\$ 320,254	\$ 209,759	\$ 992,636
3. SUBSTATION STRUCTURES	\$ 202,154	\$ 295,101	\$ 192,144	\$ 689,399
4. MAJOR EQUIPTMENT	\$ 1,722,076	\$ 151,909	\$ 65,104	\$ 1,939,089
5. LOW VOLTAGE & CONTROL CABLE	\$ 125,551	\$ 33,950	\$ 6,790	\$ 166,291
6. CONDUIT & CABLE TRENCH	\$ 309,661	\$ 196,798	\$ 87,196	\$ 593,655
7. GROUND GRID	\$ 31,094	\$ 22,266	\$ 5,107	\$ 58,466
8. CONTROL ENCLOSURE	\$ 215,312	\$ 250,250	\$ 95,062	\$ 560,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 320,027	\$ 1,071,061	\$ 222,255	\$ 1,613,343
SUBTOTAL (Costs):	\$ 3,388,497	\$ 2,341,589	\$ 883,418	\$ 6,613,504
CONTRACTOR MARK-UP (OH&P)	\$ 609,930	\$ 421,486	\$ 159,015	\$ 1,190,431
SUBTOTAL:	\$ 3,998,427	\$ 2,763,075	\$ 1,042,433	\$ 7,803,935
CONTINGENCY ON ENTIRE PROJECT	\$ 799,685	\$ 552,615	\$ 208,487	\$ 1,560,787
TOTAL:	\$ 4,798,112	\$ 3,315,690	\$ 1,250,919	\$ 9,364,722

Description of Work: Interconnection Facilities to the existing LIPA Shore Road Substation, located in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. Shore Road Substation is an existing 138 kV AIS substation with a main-tie main configuration. The Solution includes installing two (2) additional circuit breakers to create a six (6) position ring bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 -Existing Shore Road 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Circuit Breaker (PASS)	13	CY	703.89	804.44	502.78	\$ 9,385	\$ 10,726	\$ 6,704	\$ 26,815
2.25	138kV, Bus support-3 Ph, low	107	CY	703.89	804.44	502.78	\$ 75,316	\$ 86,075	\$ 53,797	\$ 215,188
2.26	138kV, Bus support-1 Ph, low	32	CY	703.89	804.44	502.78	\$ 22,862	\$ 26,128	\$ 16,330	\$ 65,321
2.27	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.28	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.29	138kV, CCVT	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.30	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.32	138kV, A Frame 50'	73	CY	703.89	804.44	502.78	\$ 51,215	\$ 58,531	\$ 36,582	\$ 146,328
2.33	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.36	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.37	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 462,623	\$ 320,254	\$ 209,759	\$ 992,636
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	10	EA	4,173.00	2,879.76	1,919.84	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.16	138kV, Bus support-1 Ph, low	8	EA	2,782.00	1,919.84	1,279.89	\$ 22,256	\$ 15,359	\$ 10,239	\$ 47,854
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	9	EA	3,206.67	1,924.00	1,282.67	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.20	138kV, Surge arrester	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.21	138kV, A Frame 50'	1	EA	33,000.00	19,800.00	13,200.00	\$ 33,000	\$ 19,800	\$ 13,200	\$ 66,000
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	918	LF	25.00	184.94	123.29	\$ 22,950	\$ 169,773	\$ 113,182	\$ 305,905
3.24	AL. Bus fittings	1	LS	27,540.00	27,540.00	13,770.00	\$ 27,540	\$ 27,540	\$ 13,770	\$ 68,850
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 202,154	\$ 295,101	\$ 192,144	\$ 689,399
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-50MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	3	EA	510,000.00	13,559.00	5,811.00	\$ 1,530,000	\$ 40,677	\$ 17,433	\$ 1,588,110
4.22	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.23	138kV, Cable sealing end	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.24	138kV, CCVT	9	EA	10,000.00	7,970.08	3,415.75	\$ 90,000	\$ 71,731	\$ 30,742	\$ 192,473
4.25	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,722,076	\$ 151,909	\$ 65,104	\$ 1,939,089
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	23,700	LF	5.30	1.43	0.29	\$ 125,551	\$ 33,950	\$ 6,790	\$ 166,291
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 125,551	\$ 33,950	\$ 6,790	\$ 166,291
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	4,800	LF	11.15	10.80	5.40	\$ 53,520	\$ 51,840	\$ 25,920	\$ 131,280
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	225	LF	81.00	107.00	57.00	\$ 18,225	\$ 24,075	\$ 12,825	\$ 55,125
6.9	138kV UG- Cable	675	LF	156.00	94.00	62.00	\$ 105,300	\$ 63,450	\$ 41,850	\$ 210,600
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	225	LF	7.40	3.33	2.22	\$ 1,664	\$ 749	\$ 500	\$ 2,913
6.12	Ground Continuity Conductor	225	LF	13.04	7.53	5.02	\$ 2,934	\$ 1,694	\$ 1,129	\$ 5,756
TOTAL - CONDUIT & CABLE TRENCH							\$ 309,661	\$ 196,798	\$ 87,196	\$ 593,655
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,120	LF	2.09	3.42	1.46	\$ 6,524	\$ 10,656	\$ 4,567	\$ 21,746
7.2	Caweld, DSA, 4/0 , T, CROSS	90	EA	165.00	75.00		\$ 14,850	\$ 6,750	\$ -	\$ 21,600
7.3	Ground Rod, 3/4" x 15'	72	EA	135.00	67.50	7.50	\$ 9,720	\$ 4,860	\$ 540	\$ 15,120
TOTAL - GROUND GRID		-					\$ 31,094	\$ 22,266	\$ 5,107	\$ 58,466

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.8	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 215,312	\$ 250,250	\$ 95,062	\$ 560,625
8 -Existing Shore Road 138 kV_ Interconnection							\$ 3,068,470	\$ 1,270,528	\$ 661,162	\$ 5,000,161
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		67,609.16	28,975.35	\$ -	\$ 67,609	\$ 28,975	\$ 96,585
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		50,001.61		\$ -	\$ 50,002	\$ -	\$ 50,002
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		200,006.42		\$ -	\$ 200,006	\$ -	\$ 200,006
9.4	Utility PM and Project Oversight	1.0	LS		50,001.61		\$ -	\$ 50,002	\$ -	\$ 50,002
9.5	Site Accommodation, Facilities, Storage	1.0	LS	50,001.61			\$ 50,002	\$ -	\$ -	\$ 50,002
	Engineering									
9.6	Design Engineering	1.00	LS		400,012.85		\$ -	\$ 400,013	\$ -	\$ 400,013
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		35,001.12		\$ -	\$ 35,001	\$ -	\$ 35,001
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		187,506.02		\$ -	\$ 187,506	\$ -	\$ 187,506
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		50,001.61		\$ -	\$ 50,002	\$ -	\$ 50,002
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,000.48		\$ -	\$ 15,000	\$ -	\$ 15,000
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			215,711.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	6,471.33	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 186,000	\$ -	\$ -	\$ 186,000	\$ 186,000
9.20	Sales Tax on Materials	8.80%	LS	3,068,470.26			\$ 270,025	\$ -	\$ -	\$ 270,025
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,000.16		\$ -	\$ 5,000	\$ -	\$ 5,000
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 320,027	\$ 1,071,061	\$ 222,255	\$ 1,613,343

Propel NY - TO47 BS1

9 -Existing Holbrook 138 Kv Upgrade

Total: \$ 1,907,161

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
9 -Existing Holbrook 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220
SUBTOTAL (Costs):	\$ 830,227	\$ 415,860	\$ 100,777	\$ 1,346,865
CONTRACTOR MARK-UP (OH&P)	\$ 149,441	\$ 74,855	\$ 18,140	\$ 242,436
SUBTOTAL:	\$ 979,668	\$ 490,715	\$ 118,917	\$ 1,589,301
CONTINGENCY ON ENTIRE PROJECT	\$ 195,934	\$ 98,143	\$ 23,783	\$ 317,860
TOTAL:	\$ 1,175,602	\$ 588,858	\$ 142,701	\$ 1,907,161

Description of Work:The Applicants propose Upgrades to the Holbrook Substation, which is an existing LIPA 138 kV AIS substation, configured as an eight (8) position ring bus. The Holbrook Substation is located in the Hamlet of Holbrook in the Town of Brookhaven in Suffolk County.The 138 kV, 138-882 Line currently feeds two (2) 138 kV/69 kV transformers via an AIS disconnect before connecting into its bus section within the ring bus. The Solution involves replacing the existing switch #1322 with a new hybrid PASS GIS 138 kV breaker system with integrated disconnect and ground switches.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 -Existing Holbrook 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9 -Existing Holbrook 138 Kv_ Upgrade							\$ 753,760	\$ 202,826	\$ 57,059	\$ 1,013,645
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,095.98	3,898.28	\$ -	\$ 9,096	\$ 3,898	\$ 12,994
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		40,545.79		\$ -	\$ 40,546	\$ -	\$ 40,546
9.4	Utility PM and Project Oversight	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.5	Site Accommodation, Facilities, Storage	1.0	LS	10,136.45			\$ 10,136	\$ -	\$ -	\$ 10,136
	Engineering									
9.6	Design Engineering	1.00	LS		81,091.59		\$ -	\$ 81,092	\$ -	\$ 81,092
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		7,095.51		\$ -	\$ 7,096	\$ -	\$ 7,096
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		38,011.68		\$ -	\$ 38,012	\$ -	\$ 38,012
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,040.93		\$ -	\$ 3,041	\$ -	\$ 3,041
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 38,000	\$ -	\$ -	\$ 38,000	\$ 38,000
9.20	Sales Tax on Materials	8.80%	LS	753,759.78			\$ 66,331	\$ -	\$ -	\$ 66,331
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,013.64		\$ -	\$ 1,014	\$ -	\$ 1,014
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220

Propel NY - TO47 BS1

10 -Existing Newbridge 138 Kv Upgrade

Total: \$ 4,643,995

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
10 -Existing Newbridge 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS	\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867
SUBTOTAL (Costs):	\$ 2,420,697	\$ 677,764	\$ 181,196	\$ 3,279,658
CONTRACTOR MARK-UP (OH&P)	\$ 435,726	\$ 121,998	\$ 32,615	\$ 590,338
SUBTOTAL:	\$ 2,856,423	\$ 799,762	\$ 213,811	\$ 3,869,996
CONTINGENCY ON ENTIRE PROJECT	\$ 571,285	\$ 159,952	\$ 42,762	\$ 773,999
TOTAL:	\$ 3,427,707	\$ 959,714	\$ 256,574	\$ 4,643,995

Description of Work: Upgrades to the existing LIPA 138 kV Newbridge Substation, located in the Town of Hempstead, Nassau County. Newbridge Substation is an existing 138 kV AIS substation with a six (6) bay BAAH configuration and 138 kV/69 kV transformers connected to each main bus. The Solution includes the addition of a new breaker in series with the existing 138 kV CB -1460, providing an additional contingency to the 138 kV Lines 138-465 and 138-461

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10 -Existing Newbridge 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	920,000.00	13,559.00	5,811.00	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10 -Existing Newbridge 138 Kv_ Upgrade							\$ 2,202,270	\$ 177,052	\$ 83,468	\$ 2,462,790
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,118.21	3,907.81	\$ -	\$ 9,118	\$ 3,908	\$ 13,026
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		98,511.60		\$ -	\$ 98,512	\$ -	\$ 98,512
9.4	Utility PM and Project Oversight	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.5	Site Accommodation, Facilities, Storage	1.0	LS	24,627.90			\$ 24,628	\$ -	\$ -	\$ 24,628
	Engineering									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.6	Design Engineering	1.00	LS		197,023.21		\$ -	\$ 197,023	\$ -	\$ 197,023
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		17,239.53		\$ -	\$ 17,240	\$ -	\$ 17,240
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		92,354.63		\$ -	\$ 92,355	\$ -	\$ 92,355
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		7,388.37		\$ -	\$ 7,388	\$ -	\$ 7,388
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 92,000	\$ -	\$ -	\$ 92,000	\$ 92,000
9.20	Sales Tax on Materials	8.80%	LS	2,202,269.72			\$ 193,800	\$ -	\$ -	\$ 193,800
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,462.79		\$ -	\$ 2,463	\$ -	\$ 2,463
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867

Propel NY - TO47 BS1

11 - Existing EGC 138 kV Upgrade

Total: \$ 15,248,572

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
11 - Existing EGC 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS	\$ 328,144	\$ 375,022	\$ 234,389	\$ 937,555
3. SUBSTATION STRUCTURES	\$ 223,280	\$ 224,937	\$ 181,778	\$ 629,995
4. MAJOR EQUIPMENT	\$ 640,578	\$ 179,553	\$ 75,237	\$ 895,368
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 2,348,736	\$ 1,714,967	\$ 935,346	\$ 4,999,048
7. GROUND GRID	\$ 34,744	\$ 24,669	\$ 5,580	\$ 64,992
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 417,913	\$ 1,785,595	\$ 369,314	\$ 2,572,822
SUBTOTAL (Costs):	\$ 4,235,571	\$ 4,567,860	\$ 1,965,335	\$ 10,768,765
CONTRACTOR MARK-UP (OH&P)	\$ 762,403	\$ 822,215	\$ 353,760	\$ 1,938,378
SUBTOTAL:	\$ 4,997,973	\$ 5,390,075	\$ 2,319,095	\$ 12,707,143
CONTINGENCY ON ENTIRE PROJECT	\$ 999,595	\$ 1,078,015	\$ 463,819	\$ 2,541,429
TOTAL:	\$ 5,997,568	\$ 6,468,089	\$ 2,782,914	\$ 15,248,572

Description of Work: Upgrades to the existing LIPA East Garden City Substation, Hamlet of Uniondale, Town of Hempstead, Nassau County. The LIPA East Garden City Substation is an existing 138 kV AIS substation with a ten (10) position ring bus configuration.The Solution includes the installation of two (2) air core reactors with by-pass circuit, in series, to the 138 kV lines 138-462, 138-463, respectively. Due to current site constraints, the new series reactors will be installed in the property adjacent to the existing station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11 - Existing EGC 138 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000
1.3	New Access Road - 20'	2,051	SY	4.85	7.20	4.80	\$ 9,945	\$ 14,764	\$ 9,843	\$ 34,552
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	6,423	CY		9.00	6.00	\$ -	\$ 57,811	\$ 38,540	\$ 96,351
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	867	CY		21.00	9.00	\$ -	\$ 18,210	\$ 7,804	\$ 26,015
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,804	CY		2.40	1.60	\$ -	\$ 18,731	\$ 12,487	\$ 31,218
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	867	CY	25.00	2.40	1.60	\$ 21,679	\$ 2,081	\$ 1,387	\$ 25,148
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,217	LF	13.85	13.85	6.92	\$ 16,853	\$ 16,853	\$ 8,427	\$ 42,133
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	75,203.20	57,600.00	27,180.00	\$ 75,203	\$ 57,600	\$ 27,180	\$ 159,983
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	1,826	LF	2.41	3.16	0.72	\$ 4,399	\$ 5,769	\$ 1,314	\$ 11,482
1.18	Temporary fencing	1,217	LF	7.50	5.25	2.25	\$ 9,128	\$ 6,389	\$ 2,738	\$ 18,255
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	408	LF	156.00	117.00	117.00	\$ 63,648	\$ 47,736	\$ 47,736	\$ 159,120
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	\$ 116,803	\$ 133,489	\$ 83,430	\$ 333,722
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	\$ 102,429	\$ 117,062	\$ 73,164	\$ 292,655
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 328,144	\$ 375,022	\$ 234,389	\$ 937,555
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	\$ 85,800	\$ 51,480	\$ 68,640	\$ 205,920
3.23	AL. Bus Tubing, 5" SCH 80	500	LF	25.00	184.94	123.29	\$ 12,500	\$ 92,469	\$ 61,646	\$ 166,615
3.24	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 223,280	\$ 224,937	\$ 181,778	\$ 629,995
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	6	EA	37,700.00	11,875.50	5,089.50	\$ 226,200	\$ 71,253	\$ 30,537	\$ 327,990
4.23	138kV, Cable sealing end	18	EA	4,446.00	1,050.00	450.00	\$ 80,028	\$ 18,900	\$ 8,100	\$ 107,028
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	6	EA	46,833.00	6,500.00	2,500.00	\$ 280,998	\$ 39,000	\$ 15,000	\$ 334,998
4.26	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 640,578	\$ 179,553	\$ 75,237	\$ 895,368
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	225	LF	266.50	53.04	13.26	\$ 59,963	\$ 11,934	\$ 2,984	\$ 74,880
6.7	345kV UG- Conduit		LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	\$ 299,700	\$ 395,900	\$ 210,900	\$ 906,500
6.11	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	\$ 1,731,600	\$ 1,043,400	\$ 688,200	\$ 3,463,200
6.12	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.13	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	\$ 27,369	\$ 12,323	\$ 8,215	\$ 47,908
6.14	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	\$ 48,244	\$ 27,850	\$ 18,567	\$ 94,661
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,348,736	\$ 1,714,967	\$ 935,346	\$ 4,999,048
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,402	LF	2.09	3.42	1.46	\$ 7,114	\$ 11,619	\$ 4,980	\$ 23,712
7.2	Caweld, DSA, 4/0 , T, CROSS	102	EA	165.00	75.00		\$ 16,830	\$ 7,650	\$ -	\$ 24,480
7.3	Ground Rod, 3/4" x 15'	80	EA	135.00	67.50	7.50	\$ 10,800	\$ 5,400	\$ 600	\$ 16,800
TOTAL - GROUND GRID							\$ 34,744	\$ 24,669	\$ 5,580	\$ 64,992
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	356,309.62	249,416.73	106,892.89	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
11 - Existing EGC 138 kV_ Upgrade							\$ 3,817,657	\$ 2,782,265	\$ 1,596,021	\$ 8,195,943
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		153,240.00	65,674.29	\$ -	\$ 153,240	\$ 65,674	\$ 218,914
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		327,837.72		\$ -	\$ 327,838	\$ -	\$ 327,838
9.4	Utility PM and Project Oversight	1.0	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.5	Site Accommodation, Facilities, Storage	1.0	LS	81,959.43			\$ 81,959	\$ -	\$ -	\$ 81,959
	Engineering									
9.6	Design Engineering	1.00	LS		655,675.44		\$ -	\$ 655,675	\$ -	\$ 655,675
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		57,371.60		\$ -	\$ 57,372	\$ -	\$ 57,372
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		307,347.86		\$ -	\$ 307,348	\$ -	\$ 307,348
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.13	Environmental-special studies/investigation	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		24,587.83		\$ -	\$ 24,588	\$ -	\$ 24,588
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
9.20	Sales Tax on Materials	8.80%	LS	3,817,657.30			\$ 335,954	\$ -	\$ -	\$ 335,954
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		8,195.94		\$ -	\$ 8,196	\$ -	\$ 8,196
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 417,913	\$ 1,785,595	\$ 369,314	\$ 2,572,822

Propel NY - TO47 BS1

BS1.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit

Total: \$ 178,777,122

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
BS1.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,185,984	\$ 10,763,750	\$ 4,301,834	\$ 17,251,568
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 12,723,086	\$ 12,194,981	\$ 7,877,550	\$ 32,795,618
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,508,207	\$ 15,377,038	\$ 9,804,979	\$ 50,690,224
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,596,428	\$ 15,849,300	\$ 5,071,891	\$ 25,517,620
SUBTOTAL (Costs):	\$ 45,013,705	\$ 54,185,070	\$ 27,056,254	\$ 126,255,030
CONTRACTOR MARK-UP (OH&P)	\$ 8,102,467	\$ 9,753,313	\$ 4,870,126	\$ 22,725,905
SUBTOTAL:	\$ 53,116,172	\$ 63,938,383	\$ 31,926,380	\$ 148,980,935
CONTINGENCY ON ENTIRE PROJECT	\$ 10,623,234	\$ 12,787,677	\$ 6,385,276	\$ 29,796,187
TOTAL:	\$ 63,739,406	\$ 76,726,059	\$ 38,311,656	\$ 178,777,122

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.

Barrett to EGC section is 8.76 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS1.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.76	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 6,132,000	\$ 2,628,000	\$ 8,760,000
1.3	Flaggers	280	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 448,000	\$ 1,344,000	\$ 448,000	\$ 2,240,000
1.4	K Rail / Lane Control / Metal Plates	46,253	LF	\$ 30	\$ 18	\$ 12	\$ 1,387,584	\$ 832,550	\$ 555,034	\$ 2,775,168
1.5	Police Support	11,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,344,000	\$ 302,400	\$ 1,646,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.76	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 350,400	\$ 1,051,200	\$ 350,400	\$ 1,752,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,185,984	\$ 10,763,750	\$ 4,301,834	\$ 17,251,568
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.76	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,224,648	\$ 816,432	\$ 2,041,080
2.2	Formwork in Trench	358,646	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 717,293	\$ 537,970	\$ 179,323	\$ 1,434,586
2.3	Trench Excavation	30,950	CY		\$ 17.5	\$ 7.5	\$ -	\$ 541,622	\$ 232,124	\$ 773,746
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,934	SF	\$ 50	\$ 25	\$ 14	\$ 96,718	\$ 47,392	\$ 27,081	\$ 171,191
2.5	Supply & Install Thermal Backfill	17,086	CY	\$ 350	\$ 245	\$ 105	\$ 5,979,931	\$ 4,185,951	\$ 1,793,979	\$ 11,959,861
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,904	CY	\$ 200	\$ 125	\$ 50	\$ 1,380,789	\$ 862,993	\$ 345,197	\$ 2,588,979
2.9	Conduit 8" HDPE	138,758	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 2,850,098	\$ 786,760	\$ 337,183	\$ 3,974,041
2.10	Conduit 4" HDPE	46,253	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 248,378	\$ 194,262	\$ 83,255	\$ 525,894
2.11	Conduit 2" HDPE	46,253	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 88,343	\$ 145,696	\$ 62,441	\$ 296,480
2.12	Warning Tape	46,253	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,938	\$ 11,563	\$ 4,625	\$ 23,126
2.13	Trench Box Shoring (Vault)	31	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 560,452	\$ 840,678	\$ 1,401,130
2.14	Splice Vault Excavation	10,075	CY		\$ 17.5	\$ 7.5	\$ -	\$ 176,313	\$ 75,563	\$ 251,875
2.15	Splice Vault Supply & Installation	31	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,085,000	\$ 511,500	\$ 1,193,500	\$ 2,790,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.16	Splice Vault Backfill	3,023	CY		\$ 14.0	\$ 6.0	\$ -	\$ 42,315	\$ 18,135	\$ 60,450
2.17	Jack and Bore along Route	104	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 83,200	\$ 166,400	\$ 166,400	\$ 416,000
2.18	HDD along Route	233	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 186,400	\$ 372,800	\$ 372,800	\$ 932,000
2.19	Air Test Ducts	231,264	LF			\$ 0.25	\$ -	\$ -	\$ 57,816	\$ 57,816
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	69	EA		\$ 400	\$ 1,200	\$ -	\$ 27,616	\$ 82,847	\$ 110,463
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	69	EA		\$ 10	\$ 15	\$ -	\$ 690	\$ 1,036	\$ 1,726
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	171	EA		\$ 400	\$ 1,200	\$ -	\$ 68,342	\$ 205,026	\$ 273,368
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 478,296	\$ 318,864	\$ -	\$ 478,296	\$ 318,864	\$ 797,160
2.26	Excess Materials Disposal to Certified Backfill	49,403	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,210,375	\$ 518,732	\$ 1,729,107
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	31	EA			\$ 4,000	\$ -	\$ -	\$ 124,000	\$ 124,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,025	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,025	\$ 20,512	\$ 61,537
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 12,723,086	\$ 12,194,981	\$ 7,877,550	\$ 32,795,618
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	145,696	FT	\$ 154	\$ 92	\$ 62	\$ 22,437,233	\$ 13,462,340	\$ 8,974,893	\$ 44,874,467
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	93	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,090,146	\$ 763,102	\$ 218,029	\$ 2,071,277
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	31	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 821,514	\$ 575,060	\$ 246,454	\$ 1,643,028
3.11	Fiber Optic Cable	48,565	FT	\$ 7	\$ 3	\$ 2	\$ 359,239	\$ 161,752	\$ 107,835	\$ 628,825
3.12	Ground Continuity Conductor	48,565	FT	\$ 13	\$ 8	\$ 5	\$ 633,245	\$ 365,552	\$ 243,701	\$ 1,242,498
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,508,207	\$ 15,377,038	\$ 9,804,979	\$ 50,690,224
BS1.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit							\$ 40,417,277	\$ 38,335,770	\$ 21,984,363	\$ 100,737,410
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,809,604	\$ 1,206,403	\$ -	\$ 1,809,604	\$ 1,206,403	\$ 3,016,007
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,007,374.10		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,029,496.40		\$ -	\$ 4,029,496	\$ -	\$ 4,029,496
4.4	Utility PM and Project Oversight	1.0	LS		1,007,374.10		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,007,374.10			\$ 1,007,374	\$ -	\$ -	\$ 1,007,374
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,036,871	\$ -	\$ -	\$ 5,036,871	\$ -	\$ 5,036,871
4.7	LiDAR /GPR	1.0	LS		\$ 181,327	\$ 120,885	\$ -	\$ 181,327	\$ 120,885	\$ 302,212
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 423,097		\$ -	\$ 423,097	\$ -	\$ 423,097
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,007,374		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 302,212		\$ -	\$ 302,212	\$ -	\$ 302,212
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 63,579	\$ -	\$ -	\$ 63,579	\$ 63,579
4.16	Legal Fees (Real estate)	1.00	LS		-	1,907.37	\$ -	\$ -	\$ 1,907	\$ 1,907
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	2	Crossing			\$ 1,000	\$ -	\$ -	\$ 2,000	\$ 2,000
4.19	Bonds	1	LS			\$ 3,560,000	\$ -	\$ -	\$ 3,560,000	\$ 3,560,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 40,417,276.74			\$ 3,589,054	\$ -	\$ -	\$ 3,589,054

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 100,737	\$ -	\$ -	\$ 100,737	\$ 100,737
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,596,428	\$ 15,849,300	\$ 5,071,891	\$ 25,517,620

Propel NY - TO47 BS1

12 - Existing Rainey 345 kV Upgrade

Total: \$ 9,824,483

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS	\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879
SUBTOTAL (Costs):	\$ 4,800,582	\$ 1,658,463	\$ 479,150	\$ 6,938,195
CONTRACTOR MARK-UP (OH&P)	\$ 864,105	\$ 298,523	\$ 86,247	\$ 1,248,875
SUBTOTAL:	\$ 5,664,686	\$ 1,956,986	\$ 565,397	\$ 8,187,070
CONTINGENCY ON ENTIRE PROJECT	\$ 1,132,937	\$ 391,397	\$ 113,079	\$ 1,637,414
TOTAL:	\$ 6,797,623	\$ 2,348,384	\$ 678,476	\$ 9,824,483

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of two new breakers in series with the existing 345 kV CB -1E and CB-6E respectively, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Existing Rainey 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	90,000.00	60,000.00	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	40,089.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	6	EA	18,000.00	3,200.00	2,800.00	\$ 108,000	\$ 19,200	\$ 16,800	\$ 144,000
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	4	EA	980,000.00	57,239.00	24,531.00	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
12 - Existing Rainey 345 kV_ Upgrade							\$ 4,364,337	\$ 587,278	\$ 266,700	\$ 5,218,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		29,889.25	12,809.68	\$ -	\$ 29,889	\$ 12,810	\$ 42,699
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		208,732.61		\$ -	\$ 208,733	\$ -	\$ 208,733
9.4	Utility PM and Project Oversight	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.5	Site Accommodation, Facilities, Storage	1.0	LS	52,183.15			\$ 52,183	\$ -	\$ -	\$ 52,183
	Engineering									
9.6	Design Engineering	1.00	LS		417,465.22		\$ -	\$ 417,465	\$ -	\$ 417,465
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		36,528.21		\$ -	\$ 36,528	\$ -	\$ 36,528
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		195,686.82		\$ -	\$ 195,687	\$ -	\$ 195,687
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,654.95		\$ -	\$ 15,655	\$ -	\$ 15,655
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 196,000	\$ -	\$ -	\$ 196,000	\$ 196,000
9.20	Sales Tax on Materials	8.80%	LS	4,364,336.72			\$ 384,062	\$ -	\$ -	\$ 384,062
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,218.32		\$ -	\$ 5,218	\$ -	\$ 5,218
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879

Propel NY - TO47 BS1

13 - Existing EGC 345 kV Upgrade

Total: Total: \$ 161,831,509

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
13 - Existing EGC 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 691,550	\$ 928,374	\$ 609,480	\$ 2,229,404
2. SUBSTATION FOUNDATIONS	\$ 3,009,479	\$ 3,185,817	\$ 1,961,321	\$ 8,156,617
3. SUBSTATION STRUCTURES	\$ 1,291,407	\$ 1,245,902	\$ 818,317	\$ 3,355,626
4. MAJOR EQUIPMENT	\$ 37,521,801	\$ 3,233,597	\$ 1,433,416	\$ 42,188,813
5. LOW VOLTAGE & CONTROL CABLE	\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
6. CONDUIT & CABLE TRENCH	\$ 2,508,334	\$ 1,336,900	\$ 783,414	\$ 4,628,648
7. GROUND GRID	\$ 212,150	\$ 153,307	\$ 35,810	\$ 401,267
8. CONTROL ENCLOSURE	\$ 1,514,278	\$ 1,228,091	\$ 405,187	\$ 3,147,556
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,800,849	\$ 13,477,410	\$ 31,301,689	\$ 49,579,948
SUBTOTAL (Costs):	\$ 52,002,783	\$ 24,911,878	\$ 37,373,128	\$ 114,287,789
CONTRACTOR MARK-UP (OH&P)	\$ 9,360,501	\$ 4,484,138	\$ 6,727,163	\$ 20,571,802
SUBTOTAL:	\$ 61,363,284	\$ 29,396,016	\$ 44,100,291	\$ 134,859,591
CONTINGENCY ON ENTIRE PROJECT	\$ 12,272,657	\$ 5,879,203	\$ 8,820,058	\$ 26,971,918
TOTAL:	\$ 73,635,941	\$ 35,275,219	\$ 52,920,349	\$ 161,831,509

Description of Work: Upgrade to the 345 kV East Garden City Substation, to be located at 555 Stewart Avenue, Hamlet of Uniondale, Town of Hempstead, Nassau County. The New 345 kV East Garden City Substation will be connected by four (4) new 345 kV underground transmission lines and the existing Y-49 Line. Also, it will serve the two (2) existing 345 kV/138 kV transformers located in the existing LIPA 138 kV East Garden City Substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 - Existing EGC 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,640	\$ 5,760	\$ 14,400
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	9,087	SY	4.85	7.20	4.80	\$ 44,071	\$ 65,425	\$ 43,617	\$ 153,112
1.4	Strip and Dispose Top Soil	1,291	CY		24.50	10.50	\$ -	\$ 31,621	\$ 13,552	\$ 45,173
1.5	Site Grading- Excavation for Substation Pad	17,446	CY		9.00	6.00	\$ -	\$ 157,018	\$ 104,679	\$ 261,697
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,355	CY		21.00	9.00	\$ -	\$ 49,460.67	\$ 21,197.43	\$ 70,658.10
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	21,197	CY		2.40	1.60	\$ -	\$ 50,874	\$ 33,916	\$ 84,790
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,355	CY	25.00	2.40	1.60	\$ 58,882	\$ 5,653	\$ 3,768	\$ 68,303
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	26,170	SY	-	6.00	4.00	\$ -	\$ 157,019	\$ 104,679	\$ 261,698
1.11	Site Surfacing - Aggregate 6" Thick	26,170	SY	8.25	4.50	3.00	\$ 215,901	\$ 117,764	\$ 78,509	\$ 412,174
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,298	LF	13.85	13.85	6.92	\$ 17,975	\$ 17,975	\$ 8,987	\$ 44,937
1.13	30' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	149,169.60	96,000.00	45,300.00	\$ 149,170	\$ 96,000	\$ 45,300	\$ 290,470
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,025	LF	2.41	3.16	0.72	\$ 4,880	\$ 6,399	\$ 1,458	\$ 12,737
1.18	Temporary fencing	1,350	LF	7.50	5.25	2.25	\$ 10,125	\$ 7,088	\$ 3,038	\$ 20,250
1.19	Substation entrance with asphalt	778	SY	19.50	26.00	19.50	\$ 15,167	\$ 20,222	\$ 15,167	\$ 50,556
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	965	LF	156.00	117.00	117.00	\$ 150,540	\$ 112,905	\$ 112,905	\$ 376,350
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 691,550	\$ 928,374	\$ 609,480	\$ 2,229,404
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818
2.2	345kV, A Frame 70'-one bay	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.3	345kV, A Frame 70'-two bay	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.4	345kV, Bus support-3 Ph	380	CY	703.89	804.44	502.78	\$ 267,589	\$ 305,816	\$ 191,135	\$ 764,540
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	523	CY	703.89	804.44	502.78	\$ 367,935	\$ 420,497	\$ 262,811	\$ 1,051,242
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	106	CY	703.89	804.44	502.78	\$ 74,330	\$ 84,949	\$ 53,093	\$ 212,372
2.14	345kV, CCVT	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.15	345kV, Disconnect Switch	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.16	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.18	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.21	345kV, Circuit Breaker (PASS)	260	CY	703.89	804.44	502.78	\$ 183,010	\$ 209,154	\$ 130,722	\$ 522,886
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	232	CY	703.89	804.44	502.78	\$ 163,301	\$ 186,630	\$ 116,644	\$ 466,575
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA							
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 3,009,479	\$ 3,185,817	\$ 1,961,321	\$ 8,156,617
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	3	EA	48,100.00	28,860.00	19,240.00	\$ 144,300	\$ 86,580	\$ 57,720	\$ 288,600
3.3	345kV, A Frame 70'-two bay	2	EA	86,580.00	51,948.00	34,632.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
3.3	345kV, Bus support-3 Ph	24	EA	8,346.00	5,758.74	3,839.16	\$ 200,304	\$ 138,210	\$ 92,140	\$ 430,654
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	66	EA	4,810.00	2,886.00	1,924.00	\$ 317,460	\$ 190,476	\$ 126,984	\$ 634,920
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.13	345kV, CCVT	24	EA	4,810.00	2,886.00	1,924.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.14	345kV, Disconnect Switch	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	2,457	LF	25.00	184.94	123.29	\$ 61,425	\$ 454,393	\$ 302,928	\$ 818,746
3.24	AL. Bus fittings	1	LS	73,710.00	73,710.00	36,855.00	\$ 73,710	\$ 73,710	\$ 36,855	\$ 184,275
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,291,407	\$ 1,245,902	\$ 818,317	\$ 3,355,626
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	24	EA	27,144.00	5,460.00	2,340.00	\$ 651,456	\$ 131,040	\$ 56,160	\$ 838,656
4.6	345kV, CCVT	24	EA	16,900.00	15,941.99	6,832.28	\$ 405,600	\$ 382,608	\$ 163,975	\$ 952,182
4.7	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	1	EA	3,633,158.00	3,520.00	880.00	\$ 3,633,158	\$ 3,520	\$ 880	\$ 3,637,558
4.11	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	2	EA		410,025.00	175,725.00	\$ -	\$ 820,050	\$ 351,450	\$ 1,171,500
4.14	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- PAR	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.15	345kV, Circuit Breaker (PASS)	13	EA	980,000.00	57,239.00	24,531.00	\$ 12,740,000	\$ 744,107	\$ 318,903	\$ 13,803,010
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	24	EA	8,450.00	5,460.00	2,340.00	\$ 202,800	\$ 131,040	\$ 56,160	\$ 390,000
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 37,521,801	\$ 3,233,597	\$ 1,433,416	\$ 42,188,813
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	85,500	LF	5.30	1.43	0.29	\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
5.2	300V Copper 12/c TC XHHW/CPE 10AWG		LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	16,200	LF	11.15	10.80	5.40	\$ 180,630	\$ 174,960	\$ 87,480	\$ 443,070
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	875	LF	266.50	53.04	13.26	\$ 233,188	\$ 46,410	\$ 11,603	\$ 291,200
6.7	345kV UG- Conduit	1,800	LF	230.08	133.40	55.96	\$ 414,140	\$ 240,122	\$ 100,726	\$ 754,988
6.8	345kV UG- Cable	6,600	LF	175.00	105.00	70.00	\$ 1,155,000	\$ 693,000	\$ 462,000	\$ 2,310,000
6.9	345kV UG- Termination	18	EA	27,144.00	9,048.00	6,032.00	\$ 488,592	\$ 162,864	\$ 108,576	\$ 760,032
6.10	Fiber Optic Cable	1,800	LF	7.40	3.33	2.22	\$ 13,315	\$ 5,995	\$ 3,997	\$ 23,306
6.11	Ground Continuity Conductor	1,800	LF	13.04	7.53	5.02	\$ 23,470	\$ 13,549	\$ 9,032	\$ 46,051
6.12	138kV UG- Conduit	0	LF				\$ -	\$ -	\$ -	\$ -
6.13	138kV UG- Cable	0	LF				\$ -	\$ -	\$ -	\$ -
6.14	138kV UG- Termination	0	EA							
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,508,334	\$ 1,336,900	\$ 783,414	\$ 4,628,648
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,760	LF	2.09	3.42	1.46	\$ 45,500	\$ 74,317	\$ 31,850	\$ 151,667
7.2	Caweld, DSA, 4/0 , T, CROSS	578	EA	165.00	75.00		\$ 95,370	\$ 43,350	\$ -	\$ 138,720
7.3	Ground Rod, 3/4" x 15'	528	EA	135.00	67.50	7.50	\$ 71,280	\$ 35,640	\$ 3,960	\$ 110,880
TOTAL - GROUND GRID							\$ 212,150	\$ 153,307	\$ 35,810	\$ 401,267
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	356,309.62	249,416.73	106,892.89	\$ 356,310	\$ 249,417	\$ 106,893	\$ 712,619
8.2	Primary Line Relays (Pilot): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (Pilot): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,514,278	\$ 1,228,091	\$ 405,187	\$ 3,147,556
13 - Existing EGC 345 kV_ Upgrade							\$ 47,201,935	\$ 11,434,467	\$ 6,071,439	\$ 64,707,842
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		612,706.74	262,588.60	\$ -	\$ 612,707	\$ 262,589	\$ 875,295
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,588,313.67		\$ -	\$ 2,588,314	\$ -	\$ 2,588,314
9.4	Utility PM and Project Oversight	1.0	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.5	Site Accommodation, Facilities, Storage	1.0	LS	647,078.42			\$ 647,078	\$ -	\$ -	\$ 647,078
	Engineering									
9.6	Design Engineering	1.00	LS		5,176,627.33		\$ -	\$ 5,176,627	\$ -	\$ 5,176,627
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		452,954.89		\$ -	\$ 452,955	\$ -	\$ 452,955
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,426,544.06		\$ -	\$ 2,426,544	\$ -	\$ 2,426,544
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		194,123.52		\$ -	\$ 194,124	\$ -	\$ 194,124
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			27,000,000.00	\$ -	\$ -	\$ 27,000,000	\$ 27,000,000
9.17	Legal Fees (Real estate)	1.00	LS		-	810,000.00	\$ -	\$ -	\$ 810,000	\$ 810,000
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,220,000	\$ -	\$ -	\$ 3,220,000	\$ 3,220,000
9.20	Sales Tax on Materials	8.80%	LS	47,201,934.73			\$ 4,153,770	\$ -	\$ -	\$ 4,153,770
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		64,707.84		\$ -	\$ 64,708	\$ -	\$ 64,708
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,800,849	\$ 13,477,410	\$ 31,301,689	\$ 49,579,948

Propel NY - TO47 BS1

BS1.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit

Total: \$ 546,334,828

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
BS1.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163
SUBTOTAL (Costs):	\$ 128,284,803	\$ 166,136,233	\$ 91,408,645	\$ 385,829,681
CONTRACTOR MARK-UP (OH&P)	\$ 23,091,265	\$ 29,904,522	\$ 16,453,556	\$ 69,449,343
SUBTOTAL:	\$ 151,376,067	\$ 196,040,755	\$ 107,862,202	\$ 455,279,024
CONTINGENCY ON ENTIRE PROJECT	\$ 30,275,213	\$ 39,208,151	\$ 21,572,440	\$ 91,055,805
TOTAL:	\$ 181,651,281	\$ 235,248,906	\$ 129,434,642	\$ 546,334,828

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.
Barrett to EGC section is 23.46 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS1.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	23.46	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 16,422,000	\$ 7,038,000	\$ 23,460,000
1.3	Flaggers	720	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,152,000	\$ 3,456,000	\$ 1,152,000	\$ 5,760,000
1.4	K Rail / Lane Control / Metal Plates	123,869	LF	\$ 30	\$ 18	\$ 12	\$ 3,716,064	\$ 2,229,638	\$ 1,486,426	\$ 7,432,128
1.5	Police Support	28,800.0	HR		\$ 120	\$ 27	\$ -	\$ 3,456,000	\$ 777,600	\$ 4,233,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	23.46	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 938,400	\$ 2,815,200	\$ 938,400	\$ 4,692,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	23.46	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 3,279,708	\$ 2,186,472	\$ 5,466,180
2.2	Formwork in Trench	878,054	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,756,109	\$ 1,317,082	\$ 439,027	\$ 3,512,218
2.3	Trench Excavation	75,773	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,326,025	\$ 568,296	\$ 1,894,321
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,736	SF	\$ 50	\$ 25	\$ 14	\$ 236,790	\$ 116,027	\$ 66,301	\$ 419,119
2.5	Supply & Install Thermal Backfill	41,830	CY	\$ 350	\$ 245	\$ 105	\$ 14,640,338	\$ 10,248,236	\$ 4,392,101	\$ 29,280,675
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,903	CY	\$ 200	\$ 125	\$ 50	\$ 3,380,509	\$ 2,112,818	\$ 845,127	\$ 6,338,455
2.9	Conduit 8" HDPE	371,606	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 7,632,795	\$ 2,107,008	\$ 903,004	\$ 10,642,807
2.10	Conduit 4" HDPE	123,869	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 665,175	\$ 520,249	\$ 222,964	\$ 1,408,388
2.11	Conduit 2" HDPE	123,869	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 236,589	\$ 390,187	\$ 167,223	\$ 793,999
2.12	Warning Tape	123,869	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,580	\$ 30,967	\$ 12,387	\$ 61,934
2.13	Trench Box Shoring (Vault)	80	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,446,328	\$ 2,169,492	\$ 3,615,819
2.14	Splice Vault Excavation	26,000	CY		\$ 17.5	\$ 7.5	\$ -	\$ 455,000	\$ 195,000	\$ 650,000
2.15	Splice Vault Supply & Installation	80	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,800,000	\$ 1,320,000	\$ 3,080,000	\$ 7,200,000
2.16	Splice Vault Backfill	7,800	CY		\$ 14.0	\$ 6.0	\$ -	\$ 109,200	\$ 46,800	\$ 156,000
2.17	Jack and Bore along Route	240	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 192,000	\$ 384,000	\$ 384,000	\$ 960,000
2.18	HDD along Route	11,072	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 8,857,600	\$ 17,715,200	\$ 17,715,200	\$ 44,288,000
2.19	Air Test Ducts	619,344	LF			\$ 0.25	\$ -	\$ -	\$ 154,836	\$ 154,836
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	45,810	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 641,340	\$ 641,340	\$ 320,670	\$ 1,603,351
2.21	PVMT, AGGREGATE, 10", BASE COURSE	12,725	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 284,786	\$ 299,025	\$ 128,154	\$ 711,964
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	169	EA		\$ 400	\$ 1,200	\$ -	\$ 67,610	\$ 202,831	\$ 270,441

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	169	EA		\$ 10	\$ 15	\$ -	\$ 1,690	\$ 2,535	\$ 4,226
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	418	EA		\$ 400	\$ 1,200	\$ -	\$ 167,318	\$ 501,954	\$ 669,273
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,280,916	\$ 853,944	\$ -	\$ 1,280,916	\$ 853,944	\$ 2,134,860
2.26	Excess Materials Disposal to Certified Backfill	122,165	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,993,035	\$ 1,282,729	\$ 4,275,764
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	80	EA			\$ 4,000	\$ -	\$ -	\$ 320,000	\$ 320,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	101,773	CF		\$ 1.0	\$ 0.5	\$ -	\$ 101,773	\$ 50,886	\$ 152,659
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	390,187	FT	\$ 154	\$ 92	\$ 62	\$ 60,088,755	\$ 36,053,253	\$ 24,035,502	\$ 120,177,510
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	240	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,813,280	\$ 1,969,296	\$ 562,656	\$ 5,345,232
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	80	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,120,036	\$ 1,484,025	\$ 636,011	\$ 4,240,072
3.11	Fiber Optic Cable	130,062	FT	\$ 7	\$ 3	\$ 2	\$ 962,070	\$ 433,185	\$ 288,790	\$ 1,684,046
3.12	Ground Continuity Conductor	130,062	FT	\$ 13	\$ 8	\$ 5	\$ 1,695,882	\$ 978,978	\$ 652,652	\$ 3,327,512
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
BS1.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit							\$ 114,995,929	\$ 117,897,551	\$ 74,830,037	\$ 307,723,518
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,781,828	\$ 3,854,552	\$ -	\$ 5,781,828	\$ 3,854,552	\$ 9,636,379
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		12,308,940.71		\$ -	\$ 12,308,941	\$ -	\$ 12,308,941
4.4	Utility PM and Project Oversight	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.5	Site Accommodation, Facilities, Storage	1.0	LS	3,077,235.18			\$ 3,077,235	\$ -	\$ -	\$ 3,077,235
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 15,386,176	\$ -	\$ -	\$ 15,386,176	\$ -	\$ 15,386,176
4.7	LiDAR /GPR	1.0	LS		\$ 553,902	\$ 369,268	\$ -	\$ 553,902	\$ 369,268	\$ 923,171
4.8	Geotech	24.0	Location		2,730.00	1,820.00	\$ -	\$ 65,520	\$ 43,680	\$ 109,200
4.9	Surveying/Staking	1	LS		\$ 1,292,439		\$ -	\$ 1,292,439	\$ -	\$ 1,292,439
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,077,235		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.12	Environmental-special studies/investigation	1	LS		\$ 175,000		\$ -	\$ 175,000	\$ -	\$ 175,000
4.13	Warranties / LOC's	1	LS		\$ 923,171		\$ -	\$ 923,171	\$ -	\$ 923,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 1,050,859	\$ -	\$ -	\$ 1,050,859	\$ 1,050,859
4.16	Legal Fees (Real estate)	1.00	LS		\$ -	\$ 31,525.77	\$ -	\$ -	\$ 31,526	\$ 31,526
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 10,920,000	\$ -	\$ -	\$ 10,920,000	\$ 10,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 114,995,929.25			\$ 10,211,639	\$ -	\$ -	\$ 10,211,639
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 307,724	\$ -	\$ -	\$ 307,724	\$ 307,724
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163

Propel NY - TO47 BS1

BS1.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit

Total: \$ 14,344,237

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
BS1.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 355,831	\$ 1,668,541	\$ 441,153	\$ 2,465,524
SUBTOTAL (Costs):	\$ 3,499,803	\$ 4,546,049	\$ 2,084,259	\$ 10,130,111
CONTRACTOR MARK-UP (OH&P)	\$ 629,965	\$ 818,289	\$ 375,167	\$ 1,823,420
SUBTOTAL:	\$ 4,129,768	\$ 5,364,338	\$ 2,459,425	\$ 11,953,531
CONTINGENCY ON ENTIRE PROJECT	\$ 825,954	\$ 1,072,868	\$ 491,885	\$ 2,390,706
TOTAL:	\$ 4,955,721	\$ 6,437,206	\$ 2,951,310	\$ 14,344,237

Description of Work: reconductoring/conversion of an existing LIPA 138 kV circuit between the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County, to the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County, via the Newbridge Road Substation in the Hamlet of East Meadow in the Town of Hempstead in Nassau County. A new 0.6 mile 345 kV line will be spliced to the existing line, creating a continuous 345 kV feed between the substations. The routing would be the existing underground routing using the LIPA-owned transmission corridors.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS1.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.63	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 441,000	\$ 189,000	\$ 630,000
1.3	Flaggers	20	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 32,000	\$ 96,000	\$ 32,000	\$ 160,000
1.4	K Rail / Lane Control / Metal Plates	3,326	LF	\$ 30	\$ 18	\$ 12	\$ 99,792	\$ 59,875	\$ 39,917	\$ 199,584
1.5	Police Support	800.0	HR		\$ 120	\$ 27	\$ -	\$ 96,000	\$ 21,600	\$ 117,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	0.63	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 25,200	\$ 75,600	\$ 25,200	\$ 126,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.63	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 88,074	\$ 58,716	\$ 146,790
2.2	Formwork in Trench	25,771	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 51,542	\$ 38,657	\$ 12,886	\$ 103,085
2.3	Trench Excavation	2,224	CY		\$ 17.5	\$ 7.5	\$ -	\$ 38,919	\$ 16,680	\$ 55,599
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	139	SF	\$ 50	\$ 25	\$ 14	\$ 6,950	\$ 3,405	\$ 1,946	\$ 12,301
2.5	Supply & Install Thermal Backfill	1,228	CY	\$ 350	\$ 245	\$ 105	\$ 429,699	\$ 300,789	\$ 128,910	\$ 859,398
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	496	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 99,219	\$ 62,012	\$ 24,805	\$ 186,036
2.9	Conduit 8" HDPE	9,979	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 204,973	\$ 56,582	\$ 24,249	\$ 285,804
2.10	Conduit 4" HDPE	3,326	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 17,863	\$ 13,971	\$ 5,988	\$ 37,821
2.11	Conduit 2" HDPE	3,326	LF	\$ 3.126	\$ 3.15	\$ 1.4	\$ 6,353	\$ 10,478	\$ 4,491	\$ 21,322
2.12	Warning Tape	3,326	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 499	\$ 832	\$ 333	\$ 1,663
2.13	Trench Box Shoring (Vault)	3	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 54,237	\$ 81,356	\$ 135,593
2.14	Splice Vault Excavation	975	CY		\$ 17.5	\$ 7.5	\$ -	\$ 17,063	\$ 7,313	\$ 24,375
2.15	Splice Vault Supply & Installation	3	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 105,000	\$ 49,500	\$ 115,500	\$ 270,000
2.16	Splice Vault Backfill	293	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,095	\$ 1,755	\$ 5,850
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	16,632	LF		\$ 0.25	\$ -	\$ -	\$ -	\$ 4,158	\$ 4,158
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	1,387	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 19,417	\$ 19,417	\$ 9,708	\$ 48,542
2.21	PVMT, AGGREGATE, 10", BASE COURSE	385	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 8,622	\$ 9,053	\$ 3,880	\$ 21,555
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	5	EA		\$ 400	\$ 1,200	\$ -	\$ 1,984	\$ 5,953	\$ 7,938

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	5	EA		\$ 10	\$ 15	\$ -	\$ 50	\$ 74	\$ 124
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	12	EA		\$ 400	\$ 1,200	\$ -	\$ 4,911	\$ 14,733	\$ 19,643
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 34,398	\$ 22,932	\$ -	\$ 34,398	\$ 22,932	\$ 57,330
2.26	Excess Materials Disposal to Certified Backfill	3,778	CY		\$ 24.5	\$ 10.5	\$ -	\$ 92,571	\$ 39,673	\$ 132,244
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	3	EA			\$ 4,000	\$ -	\$ -	\$ 12,000	\$ 12,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	3,199	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,199	\$ 1,599	\$ 4,798
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	10,478	FT	\$ 154	\$ 92	\$ 62	\$ 1,613,637	\$ 968,182	\$ 645,455	\$ 3,227,273
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	9	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 105,498	\$ 73,849	\$ 21,100	\$ 200,446
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	3	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 79,501	\$ 55,651	\$ 23,850	\$ 159,003
3.11	Fiber Optic Cable	3,493	FT	\$ 7	\$ 3	\$ 2	\$ 25,836	\$ 11,633	\$ 7,755	\$ 45,224
3.12	Ground Continuity Conductor	3,493	FT	\$ 13	\$ 8	\$ 5	\$ 45,542	\$ 26,290	\$ 17,526	\$ 89,358
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
BS1.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit							\$ 3,143,972	\$ 2,877,508	\$ 1,643,106	\$ 7,664,587
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 135,618	\$ 90,412	\$ -	\$ 135,618	\$ 90,412	\$ 226,031
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		306,583.47		\$ -	\$ 306,583	\$ -	\$ 306,583
4.4	Utility PM and Project Oversight	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.5	Site Accommodation, Facilities, Storage	1.0	LS	76,645.87			\$ 76,646	\$ -	\$ -	\$ 76,646
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 383,229	\$ -	\$ -	\$ 383,229	\$ -	\$ 383,229
4.7	LiDAR /GPR	1.0	LS		\$ 13,796	\$ 9,198	\$ -	\$ 13,796	\$ 9,198	\$ 22,994
4.8	Geotech	1.0	Location		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 53,652		\$ -	\$ 53,652	\$ -	\$ 53,652
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 76,646		\$ -	\$ 76,646	\$ -	\$ 76,646
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 22,994		\$ -	\$ 22,994	\$ -	\$ 22,994
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 50,542	\$ -	\$ -	\$ 50,542	\$ 50,542
4.16	Legal Fees (Real estate)	1.00	LS		-	1,516.26	\$ -	\$ -	\$ 1,516	\$ 1,516
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 280,000	\$ -	\$ -	\$ 280,000	\$ 280,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 3,143,972			\$ 279,185	\$ -	\$ -	\$ 279,185
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 7,665	\$ -	\$ -	\$ 7,665	\$ 7,665
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 355,831	\$ 1,668,541	\$ 441,153	\$ 2,465,524

Propel NY - TO47 BS1

BS1.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 211,488,737

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
BS1.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945
SUBTOTAL (Costs):	\$ 53,010,451	\$ 64,488,496	\$ 31,857,505	\$ 149,356,453
CONTRACTOR MARK-UP (OH&P)	\$ 9,541,881	\$ 11,607,929	\$ 5,734,351	\$ 26,884,162
SUBTOTAL:	\$ 62,552,333	\$ 76,096,426	\$ 37,591,856	\$ 176,240,614
CONTINGENCY ON ENTIRE PROJECT	\$ 12,510,467	\$ 15,219,285	\$ 7,518,371	\$ 35,248,123
TOTAL:	\$ 75,062,799	\$ 91,315,711	\$ 45,110,228	\$ 211,488,737

Description of Work: The proposed 345 kV and 138 kV electric underground transmission lines extending from the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County to the Shore Road Substation in the Glenwood Landing Hamlet in Nassau County. The proposed route will be approximately 10.3 miles, utilizing 4000 kcmil XLPE cable for the route.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS1.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,175,000	\$ 3,075,000	\$ 10,250,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	54,120	LF	\$ 30	\$ 18	\$ 12	\$ 1,623,600	\$ 974,160	\$ 649,440	\$ 3,247,200
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 410,000	\$ 1,230,000	\$ 410,000	\$ 2,050,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,432,950	\$ 955,300	\$ 2,388,250
2.2	Formwork in Trench	419,712	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 839,424	\$ 629,568	\$ 209,856	\$ 1,678,848
2.3	Trench Excavation	36,220	CY		\$ 17.5	\$ 7.5	\$ -	\$ 633,843	\$ 271,647	\$ 905,490
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,264	SF	\$ 50	\$ 25	\$ 14	\$ 113,186	\$ 55,461	\$ 31,692	\$ 200,340
2.5	Supply & Install Thermal Backfill	19,995	CY	\$ 350	\$ 245	\$ 105	\$ 6,998,115	\$ 4,898,680	\$ 2,099,434	\$ 13,996,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,079	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,615,891	\$ 1,009,932	\$ 403,973	\$ 3,029,796
2.9	Conduit 8" HDPE	162,360	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 3,334,874	\$ 920,581	\$ 394,535	\$ 4,649,990
2.10	Conduit 4" HDPE	54,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 290,624	\$ 227,304	\$ 97,416	\$ 615,344
2.11	Conduit 2" HDPE	54,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 103,369	\$ 170,478	\$ 73,062	\$ 346,909
2.12	Warning Tape	54,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,118	\$ 13,530	\$ 5,412	\$ 27,060
2.13	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.14	Splice Vault Excavation	11,375	CY		\$ 17.5	\$ 7.5	\$ -	\$ 199,063	\$ 85,313	\$ 284,375
2.15	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.16	Splice Vault Backfill	3,413	CY		\$ 14.0	\$ 6.0	\$ -	\$ 47,775	\$ 20,475	\$ 68,250
2.17	Jack and Bore along Route	113	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 90,400	\$ 180,800	\$ 180,800	\$ 452,000
2.18	HDD along Route	318	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 254,400	\$ 508,800	\$ 508,800	\$ 1,272,000
2.19	Air Test Ducts	270,600	LF			\$ 0.25	\$ -	\$ 67,650	\$ -	\$ 67,650
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,687	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 303,614	\$ 303,614	\$ 151,807	\$ 759,034
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,024	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 134,819	\$ 141,560	\$ 60,668	\$ 337,047
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	81	EA		\$ 400	\$ 1,200	\$ -	\$ 32,318	\$ 96,953	\$ 129,271

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	81	EA		\$ 10	\$ 15	\$ -	\$ 808	\$ 1,212	\$ 2,020
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	200	EA		\$ 400	\$ 1,200	\$ -	\$ 79,978	\$ 239,935	\$ 319,914
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 559,650	\$ 373,100	\$ -	\$ 559,650	\$ 373,100	\$ 932,750
2.26	Excess Materials Disposal to Certified Backfill	57,437	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,407,200	\$ 603,086	\$ 2,010,285
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	35	EA			\$ 4,000	\$ -	\$ -	\$ 140,000	\$ 140,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	47,595	CF		\$ 1.0	\$ 0.5	\$ -	\$ 47,595	\$ 23,797	\$ 71,392
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	170,478	FT	\$ 154	\$ 92	\$ 62	\$ 26,253,612	\$ 15,752,167	\$ 10,501,445	\$ 52,507,224
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	105	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,230,810	\$ 861,567	\$ 246,162	\$ 2,338,539
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	35	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 927,516	\$ 649,261	\$ 278,255	\$ 1,855,032
3.11	Fiber Optic Cable	56,826	FT	\$ 7	\$ 3	\$ 2	\$ 420,342	\$ 189,265	\$ 126,176	\$ 735,783
3.12	Ground Continuity Conductor	56,826	FT	\$ 13	\$ 8	\$ 5	\$ 740,954	\$ 427,729	\$ 285,153	\$ 1,453,836
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
BS1.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit							\$ 47,597,498	\$ 45,172,137	\$ 25,859,873	\$ 118,629,508
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,130,960	\$ 1,420,640	\$ -	\$ 2,130,960	\$ 1,420,640	\$ 3,551,600
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,745,180.33		\$ -	\$ 4,745,180	\$ -	\$ 4,745,180
4.4	Utility PM and Project Oversight	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,186,295.08			\$ 1,186,295	\$ -	\$ -	\$ 1,186,295
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,931,475	\$ -	\$ -	\$ 5,931,475	\$ -	\$ 5,931,475
4.7	LiDAR /GPR	1.0	LS		\$ 213,533	\$ 142,355	\$ -	\$ 213,533	\$ 142,355	\$ 355,889
4.8	Geotech	11.0	Location		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 830,407		\$ -	\$ 830,407	\$ -	\$ 830,407
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,186,295		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 355,889		\$ -	\$ 355,889	\$ -	\$ 355,889
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 72,803	\$ -	\$ -	\$ 72,803	\$ 72,803
4.16	Legal Fees (Real estate)	1.00	LS		-	2,184.09	\$ -	\$ -	\$ 2,184	\$ 2,184
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	100.00%	LS			\$ 4,220,000	\$ -	\$ -	\$ 4,220,000	\$ 4,220,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 47,597,498			\$ 4,226,658	\$ -	\$ -	\$ 4,226,658
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 118,630	\$ -	\$ -	\$ 118,630	\$ 118,630
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945

Propel NY - TO47 BS1

BS1.5 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 359,455,633

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
BS1.5 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552
SUBTOTAL (Costs):	\$ 91,556,197	\$ 107,706,768	\$ 54,589,882	\$ 253,852,848
CONTRACTOR MARK-UP (OH&P)	\$ 16,480,115	\$ 19,387,218	\$ 9,826,179	\$ 45,693,513
SUBTOTAL:	\$ 108,036,313	\$ 127,093,987	\$ 64,416,061	\$ 299,546,360
CONTINGENCY ON ENTIRE PROJECT	\$ 21,607,263	\$ 25,418,797	\$ 12,883,212	\$ 59,909,272
TOTAL:	\$ 129,643,575	\$ 152,512,784	\$ 77,299,273	\$ 359,455,633

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS1.5 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	17.83	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 12,481,000	\$ 5,349,000	\$ 17,830,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	94,142	LF	\$ 30	\$ 18	\$ 12	\$ 2,824,272	\$ 1,694,563	\$ 1,129,709	\$ 5,648,544
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	17.83	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 713,200	\$ 2,139,600	\$ 713,200	\$ 3,566,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	17.83	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,492,634	\$ 1,661,756	\$ 4,154,390
2.2	Formwork in Trench	734,083	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,468,166	\$ 1,101,125	\$ 367,042	\$ 2,936,333
2.3	Trench Excavation	63,349	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,108,602	\$ 475,115	\$ 1,583,717
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,959	SF	\$ 50	\$ 25	\$ 14	\$ 197,965	\$ 97,003	\$ 55,430	\$ 350,397
2.5	Supply & Install Thermal Backfill	34,971	CY	\$ 350	\$ 245	\$ 105	\$ 12,239,818	\$ 8,567,872	\$ 3,671,945	\$ 24,479,636
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,131	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,826,220	\$ 1,766,388	\$ 706,555	\$ 5,299,163
2.9	Conduit 8" HDPE	282,427	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,801,055	\$ 1,601,362	\$ 686,298	\$ 8,088,715
2.10	Conduit 4" HDPE	94,142	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 505,545	\$ 395,398	\$ 169,456	\$ 1,070,399
2.11	Conduit 2" HDPE	94,142	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 179,812	\$ 296,549	\$ 127,092	\$ 603,453
2.12	Warning Tape	94,142	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,121	\$ 23,536	\$ 9,414	\$ 47,071
2.13	Trench Box Shoring (Vault)	62	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,120,904	\$ 1,681,356	\$ 2,802,260
2.14	Splice Vault Excavation	20,150	CY		\$ 17.5	\$ 7.5	\$ -	\$ 352,625	\$ 151,125	\$ 503,750
2.15	Splice Vault Supply & Installation	62	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,170,000	\$ 1,023,000	\$ 2,387,000	\$ 5,580,000
2.16	Splice Vault Backfill	6,045	CY		\$ 14.0	\$ 6.0	\$ -	\$ 84,630	\$ 36,270	\$ 120,900
2.17	Jack and Bore along Route	212	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 169,600	\$ 339,200	\$ 339,200	\$ 848,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	470,712	LF			\$ 0.25	\$ -	\$ -	\$ 117,678	\$ 117,678
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	37,981	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 531,739	\$ 531,739	\$ 265,869	\$ 1,329,347
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,550	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 236,117	\$ 247,923	\$ 106,253	\$ 590,293
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	141	EA		\$ 400	\$ 1,200	\$ -	\$ 56,524	\$ 169,573	\$ 226,098

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	141	EA		\$ 10	\$ 15	\$ -	\$ 1,413	\$ 2,120	\$ 3,533
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	350	EA		\$ 400	\$ 1,200	\$ -	\$ 139,884	\$ 419,651	\$ 559,535
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 973,518	\$ 649,012	\$ -	\$ 973,518	\$ 649,012	\$ 1,622,530
2.26	Excess Materials Disposal to Certified Backfill	100,690	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,466,899	\$ 1,057,242	\$ 3,524,142
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	62	EA			\$ 4,000	\$ -	\$ -	\$ 248,000	\$ 248,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	83,499	CF		\$ 1.0	\$ 0.5	\$ -	\$ 83,499	\$ 41,749	\$ 125,248
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	296,549	FT	\$ 154	\$ 92	\$ 62	\$ 45,668,478	\$ 27,401,087	\$ 18,267,391	\$ 91,336,956
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	62	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,643,028	\$ 1,150,120	\$ 492,908	\$ 3,286,056
3.11	Fiber Optic Cable	98,850	FT	\$ 7	\$ 3	\$ 2	\$ 731,190	\$ 329,228	\$ 219,485	\$ 1,279,904
3.12	Ground Continuity Conductor	98,850	FT	\$ 13	\$ 8	\$ 5	\$ 1,288,899	\$ 744,040	\$ 496,027	\$ 2,528,966
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
BS1.5 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit							\$ 82,228,347	\$ 76,499,301	\$ 43,869,648	\$ 202,597,296
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,611,068	\$ 2,407,379	\$ -	\$ 3,611,068	\$ 2,407,379	\$ 6,018,447
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		8,103,891.84		\$ -	\$ 8,103,892	\$ -	\$ 8,103,892
4.4	Utility PM and Project Oversight	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,025,972.96			\$ 2,025,973	\$ -	\$ -	\$ 2,025,973
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,129,865	\$ -	\$ -	\$ 10,129,865	\$ -	\$ 10,129,865
4.7	LiDAR /GPR	1.0	LS		\$ 364,675	\$ 243,117	\$ -	\$ 364,675	\$ 243,117	\$ 607,792
4.8	Geotech	18.0	Location		2,730.00	1,820.00	\$ -	\$ 49,140	\$ 32,760	\$ 81,900
4.9	Surveying/Staking	1	LS		\$ 850,909		\$ -	\$ 850,909	\$ -	\$ 850,909
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,025,973		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.12	Environmental-special studies/investigation	-	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 607,792	\$ -	\$ -	\$ 607,792	\$ 607,792
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 45,232	\$ -	\$ -	\$ 45,232	\$ 45,232
4.16	Legal Fees (Real estate)	1.00	LS		-	1,356.96	\$ -	\$ -	\$ 1,357	\$ 1,357
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 7,180,000	\$ -	\$ -	\$ 7,180,000	\$ 7,180,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 82,228,347			\$ 7,301,877	\$ -	\$ -	\$ 7,301,877
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 202,597	\$ -	\$ -	\$ 202,597	\$ 202,597
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552

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BS1.6a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (one line each circuit)

Total: \$ 268,731,745

BS1.6a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (one line each circuit)				
	Material Supply	Labor Supply	Equip Supply	Total
BS1.6a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (one line each circuit)				
1. SUBMARINE CABLE	\$ 45,158,272	\$ 59,271,737	\$ 42,238,005	\$ 146,668,014
2. TRANSITION STATION	\$ 555,750	\$ 593,355	\$ 558,702	\$ 1,707,807
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 5,506,592	\$ 24,417,233	\$ 11,482,660	\$ 41,406,484
SUBTOTAL (Costs):	\$ 51,220,615	\$ 84,282,324	\$ 54,279,367	\$ 189,782,306
CONTRACTOR MARK-UP (OH&P)	\$ 9,219,711	\$ 15,170,818	\$ 9,770,286	\$ 34,160,815
SUBTOTAL:	\$ 60,440,325	\$ 99,453,142	\$ 64,049,653	\$ 223,943,121
CONTINGENCY ON ENTIRE PROJECT	\$ 12,088,065	\$ 19,890,628	\$ 12,809,931	\$ 44,788,624
TOTAL:	\$ 72,528,390	\$ 119,343,771	\$ 76,859,584	\$ 268,731,745

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS1.6a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (one line each circuit)										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA + Vessel Install	100,246	FT	\$ 375	\$ 400	\$ 250	\$ 37,592,280	\$ 40,098,432	\$ 25,061,520	\$ 102,752,232
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 5,073,819	\$ 3,382,546	\$ -	\$ 5,073,819	\$ 3,382,546	\$ 8,456,364
1.3	Submarine Cable Splicing if Required 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.5	Outdoor Termination	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.6	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.7	HDD along Route	4,062	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,499,840	\$ 12,999,680	\$ 12,999,680	\$ 32,499,200
1.8	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 33,891	\$ 22,594	\$ -	\$ 33,891	\$ 22,594	\$ 56,485
1.9	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
1.10	Trench Excavation	1,612	CY		\$ 17.5	\$ 7.5	\$ -	\$ 28,207	\$ 12,089	\$ 40,296
1.11	Supply & Install 6" Sand Bedding for direct bury conduits	101	SF	\$ 50	\$ 25	\$ 14	\$ 5,037	\$ 2,468	\$ 1,410	\$ 8,916
1.12	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
1.13	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
1.14	Native Backfill -direct bury conduits sys Trench	1,491	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,880	\$ 8,949	\$ 29,828
1.15	Conduit 15" HDPE	2,560	LF	\$ 150.0	\$ 45.0	\$ 30.0	\$ 384,000	\$ 115,200	\$ 76,800	\$ 576,000
1.16	Conduit 4" HDPE	1,280	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 6,874	\$ 5,376	\$ 2,304	\$ 14,554
1.17	Conduit 2" HDPE	0	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
1.18	Warning Tape	2,560	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 384	\$ 640	\$ 256	\$ 1,280
TOTAL - MARINE CABLE :							\$ 45,158,272	\$ 59,271,737	\$ 42,238,005	\$ 146,668,014
2. TRANSITION STATION										
2.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,094	\$ 14,063	\$ 35,156
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	1,300	LF	7.50	5.25	2.25	\$ 9,750	\$ 6,825	\$ 2,925	\$ 19,500
2.4	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.5	Splice Vault Excavation	1,593	CY		\$ 17.5	\$ 7.5	\$ -	\$ 27,876	\$ 11,947	\$ 39,822
2.6	Splice Vault Supply & Installation	4	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 280,000	\$ 90,000	\$ 210,000	\$ 580,000
2.7	Splice Vault Backfill	478	CY		\$ 14.0	\$ 6.0	\$ -	\$ 6,690	\$ 2,867	\$ 9,557
2.8	Air Test Ducts	3,840	LF			\$ 0.25	\$ -	\$ -	\$ 960	\$ 960
2.9	Restoration (incl. Paving)	19,000	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 266,000	\$ 266,000	\$ 133,000	\$ 665,000
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill	1,606	CY		\$ 24.5	\$ 10.5	\$ -	\$ 39,349	\$ 16,864	\$ 56,213

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	3,205	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,205	\$ 1,602	\$ 4,807
2.20							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 555,750	\$ 593,355	\$ 558,702	\$ 1,707,807
BS1.6a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (one line each circuit)							\$ 45,714,022	\$ 59,865,091	\$ 42,796,707	\$ 148,375,821
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		5,935,032.85		\$ -	\$ 5,935,033	\$ -	\$ 5,935,033
3.4	Utility PM and Project Oversight	1.0	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.5	Site Accommodation, Facilities, Storage	1.0	LS	1,483,758.21			\$ 1,483,758	\$ -	\$ -	\$ 1,483,758
	Engineering									
3.6	Design Engineering	1	LS		\$ 7,418,791		\$ -	\$ 7,418,791	\$ -	\$ 7,418,791
3.7	Surveying/Staking	1	LS		\$ 1,038,631		\$ -	\$ 1,038,631	\$ -	\$ 1,038,631
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
3.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,483,758		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
3.12	Warranties / LOC's	1	LS		\$ 445,127		\$ -	\$ 445,127	\$ -	\$ 445,127
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS			\$ 119,087	\$ -	\$ -	\$ 119,087	\$ 119,087
3.15	Legal Fees (Real estate)	1.00	LS		-	3,572.61	\$ -	\$ -	\$ 3,573	\$ 3,573
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Bonds	1	LS			\$ 5,360,000	\$ -	\$ -	\$ 5,360,000	\$ 5,360,000
3.18	Sales Tax on Materials	8.8%	LS	\$ 45,714,022			\$ 4,022,834	\$ -	\$ -	\$ 4,022,834
3.19	Contractor Permits	1	LS		\$ 148,376		\$ -	\$ 148,376	\$ -	\$ 148,376
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,506,592	\$ 24,417,233	\$ 11,482,660	\$ 41,406,484

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BS1.6a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)

Total: \$ 57,646,592

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
BS1.6a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 458,544	\$ 2,358,566	\$ 901,978	\$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,609,216	\$ 3,766,387	\$ 2,219,465	\$ 9,595,067
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 9,600,745	\$ 5,671,607	\$ 3,650,873	\$ 18,923,225
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,536,137	\$ 5,351,413	\$ 1,585,940	\$ 8,473,490
SUBTOTAL (Costs):	\$ 15,204,642	\$ 17,147,973	\$ 8,358,255	\$ 40,710,870
CONTRACTOR MARK-UP (OH&P)	\$ 2,736,836	\$ 3,086,635	\$ 1,504,486	\$ 7,327,957
SUBTOTAL:	\$ 17,941,478	\$ 20,234,608	\$ 9,862,741	\$ 48,038,827
CONTINGENCY ON ENTIRE PROJECT	\$ 3,588,296	\$ 4,046,922	\$ 1,972,548	\$ 9,607,765
TOTAL:	\$ 21,529,773	\$ 24,281,530	\$ 11,835,289	\$ 57,646,592

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS1.6a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.66	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,162,000	\$ 498,000	\$ 1,660,000
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	8,765	LF	\$ 30	\$ 18	\$ 12	\$ 262,944	\$ 157,766	\$ 105,178	\$ 525,888
1.5	Police Support	3,600.0	HR		\$ 120	\$ 27	\$ -	\$ 432,000	\$ 97,200	\$ 529,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	1.66	Mile	\$ 60,000	\$ 180,000	\$ 60,000	\$ 99,600	\$ 298,800	\$ 99,600	\$ 498,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 458,544	\$ 2,358,566	\$ 901,978	\$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y57 & Y58 -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.2	Formwork in Trench	70,118	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 140,237	\$ 105,178	\$ 35,059	\$ 280,474
2.3	Trench Excavation	5,189	CY		\$ 17.5	\$ 7.5	\$ -	\$ 90,803	\$ 38,916	\$ 129,719
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	540	CY	\$ 50	\$ 25	\$ 14	\$ 27,025	\$ 13,242	\$ 7,567	\$ 47,834
2.5	Supply & Install Thermal Backfill -conduit level	4,769	CY	\$ 350	\$ 245	\$ 105	\$ 1,668,988	\$ 1,168,292	\$ 500,697	\$ 3,337,977
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,667	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 333,355	\$ 208,347	\$ 83,339	\$ 625,040
2.8	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.9	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.10	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.11	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.12	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.13	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500
2.14	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.15	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,477	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 62,676	\$ 62,676	\$ 31,338	\$ 156,689

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,244	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,831	\$ 29,223	\$ 12,524	\$ 69,578
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,667	\$ 20,001	\$ 26,668
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	17	EA		\$ 10	\$ 15	\$ -	\$ 167	\$ 250	\$ 417
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	48	EA		\$ 400	\$ 1,200	\$ -	\$ 19,074	\$ 57,222	\$ 76,297
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.24	Excess Materials Disposal to Certified Backfill	7,455	CY		\$ 24.5	\$ 10.5	\$ -	\$ 182,652	\$ 78,279	\$ 260,932
2.25	Rock Excavation and Removal	3,979	CY		\$ 243	\$ 162	\$ -	\$ 966,939	\$ 644,626	\$ 1,611,566
2.26	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	5,969	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,969	\$ 2,984	\$ 8,953
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,609,216	\$ 3,766,387	\$ 2,219,465	\$ 9,595,067
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.7	Y57 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.8	Y57 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.9	Y57 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y57 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y57 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y57 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.1	Y58 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.2	Y58 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.3	Y58 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y58 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y58 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y58 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	4	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 106,002	\$ 74,201	\$ 31,801	\$ 212,004
3.11	Fiber Optic Cable	18,406	FT	\$ 7	\$ 3	\$ 2	\$ 136,150	\$ 61,303	\$ 40,869	\$ 238,322
3.12	Ground Continuity Conductor	18,406	FT	\$ 13	\$ 8	\$ 5	\$ 239,997	\$ 138,543	\$ 92,362	\$ 470,901
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 9,600,745	\$ 5,671,607	\$ 3,650,873	\$ 18,923,225
BS1.6a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)							\$ 13,668,505	\$ 11,796,560	\$ 6,772,316	\$ 32,237,380
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 557,066	\$ 371,378	\$ -	\$ 557,066	\$ 371,378	\$ 928,444
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		1,289,495.22		\$ -	\$ 1,289,495	\$ -	\$ 1,289,495
4.4	Utility PM and Project Oversight	1.0	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.5	Site Accommodation, Facilities, Storage	1.0	LS	322,373.80			\$ 322,374	\$ -	\$ -	\$ 322,374
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,611,869	\$ -	\$ -	\$ 1,611,869	\$ -	\$ 1,611,869
4.7	LiDAR /GPR	1.0	LS		\$ 58,027	\$ 38,685	\$ -	\$ 58,027	\$ 38,685	\$ 96,712
4.8	Geotech	2.0	Location		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 225,662		\$ -	\$ 225,662	\$ -	\$ 225,662
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 322,374		\$ -	\$ 322,374	\$ -	\$ 322,374
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 96,712		\$ -	\$ 96,712	\$ -	\$ 96,712
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,140,000	\$ -	\$ -	\$ 1,140,000	\$ 1,140,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 13,668,504.91			\$ 1,213,763	\$ -	\$ -	\$ 1,213,763
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 32,237	\$ -	\$ -	\$ 32,237	\$ 32,237
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,536,137	\$ 5,351,413	\$ 1,585,940	\$ 8,473,490

Propel NY - TO47 BS1

BS1.6b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit

Total: \$ 192,457,231

Propel NY - TO47 BS1				
	Material Supply	Labor Supply	Equip Supply	Total
BS1.6b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,062,976	\$ 10,216,426	\$ 4,057,750	\$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 13,413,863	\$ 17,463,031	\$ 12,869,325	\$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 24,404,937	\$ 14,775,402	\$ 9,279,739	\$ 48,460,079
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,626,936	\$ 17,106,525	\$ 5,639,213	\$ 27,372,674
SUBTOTAL (Costs):	\$ 44,508,712	\$ 59,561,384	\$ 31,846,028	\$ 135,916,124
CONTRACTOR MARK-UP (OH&P)	\$ 8,011,568	\$ 10,721,049	\$ 5,732,285	\$ 24,464,902
SUBTOTAL:	\$ 52,520,280	\$ 70,282,433	\$ 37,578,313	\$ 160,381,026
CONTINGENCY ON ENTIRE PROJECT	\$ 10,504,056	\$ 14,056,487	\$ 7,515,663	\$ 32,076,205
TOTAL:	\$ 63,024,336	\$ 84,338,920	\$ 45,093,976	\$ 192,457,231

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

New Rochelle Station To Sprainbrook segment is 8.14 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS1.6b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.14	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,698,000	\$ 2,442,000	\$ 8,140,000
1.3	Flaggers	280	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 448,000	\$ 1,344,000	\$ 448,000	\$ 2,240,000
1.4	K Rail / Lane Control / Metal Plates	42,979	LF	\$ 30	\$ 18	\$ 12	\$ 1,289,376	\$ 773,626	\$ 515,750	\$ 2,578,752
1.5	Police Support	11,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,344,000	\$ 302,400	\$ 1,646,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.14	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 325,600	\$ 976,800	\$ 325,600	\$ 1,628,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,062,976	\$ 10,216,426	\$ 4,057,750	\$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.14	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,137,972	\$ 758,648	\$ 1,896,620
2.2	Formwork in Trench	318,202	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 636,403	\$ 477,302	\$ 159,101	\$ 1,272,806
2.3	Trench Excavation	16,476	CY		\$ 17.5	\$ 7.5	\$ -	\$ 288,326	\$ 123,568	\$ 411,894
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,716	SF	\$ 50	\$ 25	\$ 14	\$ 85,811	\$ 42,048	\$ 24,027	\$ 151,886
2.5	Supply & Install Thermal Backfill	15,159	CY	\$ 350	\$ 245	\$ 105	\$ 5,305,570	\$ 3,713,899	\$ 1,591,671	\$ 10,611,139
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,125	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,225,076	\$ 765,673	\$ 306,269	\$ 2,297,018
2.9	Conduit 8" HDPE	128,938	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 2,648,378	\$ 731,076	\$ 313,318	\$ 3,692,773
2.10	Conduit 4" HDPE	42,979	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 230,798	\$ 180,513	\$ 77,363	\$ 488,674
2.11	Conduit 2" HDPE	42,979	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 82,090	\$ 135,384	\$ 58,022	\$ 275,497
2.12	Warning Tape	42,979	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,447	\$ 10,745	\$ 4,298	\$ 21,490
2.13	Trench Box Shoring (Vault)	40	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 723,164	\$ 1,084,746	\$ 1,807,910
2.14	Splice Vault Excavation	7,800	CY		\$ 17.5	\$ 7.5	\$ -	\$ 136,500	\$ 58,500	\$ 195,000
2.15	Splice Vault Supply & Installation	40	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,400,000	\$ 660,000	\$ 1,540,000	\$ 3,600,000
2.16	Splice Vault Backfill	2,340	CY		\$ 14.0	\$ 6.0	\$ -	\$ 32,760	\$ 14,040	\$ 46,800
2.17	Jack and Bore along Route	310	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 248,000	\$ 496,000	\$ 496,000	\$ 1,240,000
2.18	HDD along Route	1,494	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,195,200	\$ 2,390,400	\$ 2,390,400	\$ 5,976,000
2.19	Air Test Ducts	214,896	LF			\$ 0.25	\$ -	\$ -	\$ 53,724	\$ 53,724
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,317	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 242,436	\$ 242,436	\$ 121,218	\$ 606,089
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,810	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 107,653	\$ 113,036	\$ 48,444	\$ 269,132
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	61	EA		\$ 400	\$ 1,200	\$ -	\$ 24,502	\$ 73,505	\$ 98,006

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	61	EA		\$ 10	\$ 15	\$ -	\$ 613	\$ 919	\$ 1,531
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,635	\$ 181,905	\$ 242,540
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 444,444	\$ 296,296	\$ -	\$ 444,444	\$ 296,296	\$ 740,740
2.26	Excess Materials Disposal to Certified Backfill	28,517	CY		\$ 24.5	\$ 10.5	\$ -	\$ 698,654	\$ 299,423	\$ 998,078
2.27	Rock Excavation and Removal	16,184	CY		\$ 243	\$ 162	\$ -	\$ 3,932,675	\$ 2,621,783	\$ 6,554,458
2.28	Dewatering	40	EA			\$ 4,000	\$ -	\$ -	\$ 160,000	\$ 160,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	24,276	CF		\$ 1.0	\$ 0.5	\$ -	\$ 24,276	\$ 12,138	\$ 36,414
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,413,863	\$ 17,463,031	\$ 12,869,325	\$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	40	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,060,018	\$ 742,013	\$ 318,005	\$ 2,120,036
3.11	Fiber Optic Cable	45,128	FT	\$ 7	\$ 3	\$ 2	\$ 333,813	\$ 150,304	\$ 100,203	\$ 584,319
3.12	Ground Continuity Conductor	45,128	FT	\$ 13	\$ 8	\$ 5	\$ 588,426	\$ 339,680	\$ 226,453	\$ 1,154,559
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 24,404,937	\$ 14,775,402	\$ 9,279,739	\$ 48,460,079
BS1.6b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit							\$ 39,881,776	\$ 42,454,859	\$ 26,206,815	\$ 108,543,450
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,059,850	\$ 1,373,233	\$ -	\$ 2,059,850	\$ 1,373,233	\$ 3,433,084
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,341,737.99		\$ -	\$ 4,341,738	\$ -	\$ 4,341,738
4.4	Utility PM and Project Oversight	1.0	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,085,434.50			\$ 1,085,434	\$ -	\$ -	\$ 1,085,434
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,427,172	\$ -	\$ -	\$ 5,427,172	\$ -	\$ 5,427,172
4.7	LiDAR /GPR	1.0	LS		\$ 195,378	\$ 130,252	\$ -	\$ 195,378	\$ 130,252	\$ 325,630
4.8	Geotech	9.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 455,882		\$ -	\$ 455,882	\$ -	\$ 455,882
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,085,434		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 325,630		\$ -	\$ 325,630	\$ -	\$ 325,630
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 164,858	\$ -	\$ -	\$ 164,858	\$ 164,858
4.16	Legal Fees (Real estate)	1.00	LS		\$ -	\$ 4,945.74	\$ -	\$ -	\$ 4,946	\$ 4,946
4.17	Insurance	-	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 3,840,000	\$ -	\$ -	\$ 3,840,000	\$ 3,840,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 39,881,775.62			\$ 3,541,502	\$ -	\$ -	\$ 3,541,502
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 108,543	\$ -	\$ -	\$ 108,543	\$ 108,543
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,626,936	\$ 17,106,525	\$ 5,639,213	\$ 27,372,674

Propel NY - TO47 BS1	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO47 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contracct value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversite is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	Shore Road to Sprainbrook 345kv UG line, assume Shore Road to New Rochelle is 2-circuit, New Rochelle to Sprainbrook is 1 -circuit.
36	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 1 circuits, 2 cable per circuit, so there are 2 passes.
37	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
38	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
39	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
40	Substation pad is based on 8" base and 6" surfacing rock.
41	The firewalls for transformers/PAR/Reactors are assumed 30' tall, if required
42	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
43	Costs for precast concrete piles (12"x80') were included in several substations by developer, there are no drawings nor geo technical report to verify if it is required and the quantities. We assumed it is required and included the costs based on developer's quantities.
44	The control panels quantities and values are provided by Sub Station Engineers.

Propel NY - TO48 BS2		
REVISION: 1		
Propel NY - TO48 BS2 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1 - New Rochelle 345kV Substation	\$ 5,189,956
Direct Labor, Material & Equipment Costs	2 - Shore Road 345 kV GIS Substation	\$ 23,199,414
Direct Labor, Material & Equipment Costs	3 - Ruland Road 345/138 kV Substation	\$ 73,584,516
Direct Labor, Material & Equipment Costs	4 - Barrett 345 kV Substation	\$ 64,802,255
Direct Labor, Material & Equipment Costs	5 - Existing EGC 345 kV_ Upgrade	\$ 7,358,978
Direct Labor, Material & Equipment Costs	6 - Existing 345 kV Tremont Substation_GIS_ Interconnection	\$ 21,413,864
Direct Labor, Material & Equipment Costs	7 - Existing Sprain Brook 345 kV_ Interconnection	\$ 10,116,775
Direct Labor, Material & Equipment Costs	8 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 7,291,825
Direct Labor, Material & Equipment Costs	9 -Existing Shore Road 138 kV_ Interconnection	\$ 9,362,353
Direct Labor, Material & Equipment Costs	10 -Existing Syosset 138 kV_ Interconnection	\$ 12,319,701
Direct Labor, Material & Equipment Costs	11 -Existing Holbrook 138 Kv_ Upgrade	\$ 1,013,645
Direct Labor, Material & Equipment Costs	12 -Existing Barrett 138 Kv_ Upgrade	\$ -
Direct Labor, Material & Equipment Costs	13 - Existing EGC 138 kV_ Upgrade	\$ 9,544,442
Direct Labor, Material & Equipment Costs	14 -Existing Lake Success 138 kV_ Upgrade	\$ 12,857,454
Direct Labor, Material & Equipment Costs	15 - Existing Rainey 345 kV_ Upgrade	\$ 2,756,158
SUBTOTAL (Costs):		\$ 260,811,336
CONTRACTOR MARK-UP (OH&P)		\$ 44,919,457
SUBTOTAL (AFTER MU):		\$ 305,730,793
CONTINGENCY ON ENTIRE PROJECT		\$ 61,146,159
Substation TOTAL:		\$ 366,876,952
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	BS2.1 Barrett to Tremont 345kV Onshore UG Cables -single circuit	\$ 317,449,703
Direct Labor, Material & Equipment Costs	BS2.2 Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 113,508,061
Direct Labor, Material & Equipment Costs	BS2.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 202,597,296
Direct Labor, Material & Equipment Costs	BS2.4a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	\$ 148,375,821
Direct Labor, Material & Equipment Costs	BS2.4a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 32,237,380
Direct Labor, Material & Equipment Costs	BS2.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit	\$ 108,543,450
Direct Labor, Material & Equipment Costs	Other Misc. Upgrades	\$ 8,200,000
SUBTOTAL (Costs):		\$ 930,911,712
CONTRACTOR MARK-UP (OH&P)		\$ 167,564,108
SUBTOTAL (AFTER MU):		\$ 1,098,475,820
CONTINGENCY ON ENTIRE PROJECT		\$ 219,695,164
Transmission Line TOTAL:		\$ 1,318,170,985
Propel NY - TO48 BS2Total Direct Cost		\$ 1,685,047,937

Propel NY - TO48 BS2 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1 - New Rochelle 345kV Substation	\$ 4,190,336
Indirect Costs	2 - Shore Road 345 kV GIS Substation	\$ 7,887,702
Indirect Costs	3 - Ruland Road 345/138 kV Substation	\$ 25,072,487
Indirect Costs	4 - Barrett 345 kV Substation	\$ 32,043,638
Indirect Costs	5 - Existing EGC 345 kV_ Upgrade	\$ 12,760,863
Indirect Costs	6 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 3,217,283
Indirect Costs	7 - Existing Sprain Brook 345 kV_ Interconnection	\$ 3,251,537
Indirect Costs	8 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 2,322,912
Indirect Costs	9 -Existing Shore Road 138 kV_ Interconnection	\$ 3,015,951
Indirect Costs	10 -Existing Syosset 138 kV_ Interconnection	\$ 4,108,340
Indirect Costs	11 -Existing Holbrook 138 Kv_ Upgrade	\$ 333,220
Indirect Costs	12 -Existing Barrett 138 Kv_ Upgrade	\$ -
Indirect Costs	13 - Existing EGC 138 kV_ Upgrade	\$ 2,985,944
Indirect Costs	14 -Existing Lake Success 138 kV_ Upgrade	\$ 4,247,145
Indirect Costs	15 - Existing Rainey 345 kV_ Upgrade	\$ 903,991
SUBTOTAL (Costs):		\$ 106,341,350
CONTRACTOR MARK-UP (OH&P)		\$ 19,141,443
SUBTOTAL (AFTER MU):		\$ 125,482,792
CONTINGENCY ON ENTIRE PROJECT		\$ 25,096,558
Substation TOTAL:		\$ 150,579,351
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	BS2.1 Barrett to Tremont 345kV Onshore UG Cables -single circuit	\$ 80,417,599
Indirect Costs	BS2.2 Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 29,363,579
Indirect Costs	BS2.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 51,255,552
Indirect Costs	BS2.4a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	\$ 41,406,484
Indirect Costs	BS2.4a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 8,473,490
Indirect Costs	BS2.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit	\$ 27,372,674
Indirect Costs	Other Misc. Upgrades	\$ 2,606,000
SUBTOTAL (Costs):		\$ 240,895,378
CONTRACTOR MARK-UP (OH&P)		\$ 43,361,168
SUBTOTAL (AFTER MU):		\$ 284,256,546
CONTINGENCY ON ENTIRE PROJECT		\$ 56,851,309
Transmission Line TOTAL:		\$ 341,107,855
Propel NY - TO48 BS2 Total Indirect Cost		\$ 491,687,206
Propel NY - TO48 BS2 Total		\$ 2,176,735,143

Propel NY - TO48 BS2

1 - New Rochelle 345kV Substation

Total: \$ 13,282,494

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
1 - New Rochelle 345kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS	\$ 227,559	\$ 260,067	\$ 162,542	\$ 650,169
3. SUBSTATION STRUCTURES	\$ 280,966	\$ 288,799	\$ 189,353	\$ 759,118
4. MAJOR EQUIPTMENT	\$ 527,046	\$ 163,391	\$ 70,025	\$ 760,461
5. LOW VOLTAGE & CONTROL CABLE	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH	\$ 198,230	\$ 43,314	\$ 12,044	\$ 253,588
7. GROUND GRID	\$ 56,711	\$ 40,853	\$ 9,473	\$ 107,037
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 270,692	\$ 1,145,032	\$ 2,774,612	\$ 4,190,336
SUBTOTAL (Costs):	\$ 2,756,973	\$ 2,795,584	\$ 3,827,734	\$ 9,380,292
CONTRACTOR MARK-UP (OH&P)	\$ 496,255	\$ 503,205	\$ 688,992	\$ 1,688,453
SUBTOTAL:	\$ 3,253,229	\$ 3,298,789	\$ 4,516,727	\$ 11,068,745
CONTINGENCY ON ENTIRE PROJECT	\$ 650,646	\$ 659,758	\$ 903,345	\$ 2,213,749
TOTAL:	\$ 3,903,874	\$ 3,958,547	\$ 5,420,072	\$ 13,282,494

Description of Work: New, greenfield substation to be called “New Rochelle Substation,” which would be 345 kV and located near 60 Echo Avenue in the City of New Rochelle, Westchester County. The substation would allow for the transition of electric submarine transmission cables to electric underground transmission cables at a location outside of the shoreline of Long Island Sound.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
1 - New Rochelle 345kV Substation											
1. SITE PREP/ GRADING/ FENCING / CIVIL											
1.1	Site Clearing	1.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 19,980	\$ 13,320	\$ 33,300	Measure dwg ~1.85 AC. Perimeter+20' Site is a light wooded plot
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -	Based on dwg- green field-> no demo
1.3	New Access Road - 20'	3,698	SY	4.85	7.20	4.80	\$ 17,933	\$ 26,622	\$ 17,748	\$ 62,304	Interior access road- Assumes Type gravel road. Measure dwg- assume 12" stabilized subbased compacted, with geogrid (8" base & 6" rock cover included in substation base & surfacing)
1.4	Strip and Dispose Top Soil	2,985	CY		24.50	10.50	\$ -	\$ 73,124	\$ 31,339	\$ 104,463	Assume 1' top soil
1.5	Site Grading- Excavation for Substation Pad	8,954	CY		9.00	6.00	\$ -	\$ 80,586	\$ 53,724	\$ 134,310	Assume excavate avg 3', no rock
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	4,835	CY		21.00	9.00	\$ -	\$ 101,538.36	\$ 43,516.44	\$ 145,054.80	
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,253	CY		2.40	1.60	\$ -	\$ 17,407	\$ 11,604	\$ 29,011	Assume reuse 60% from excavation, truck measure
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,835	CY	25.00	2.40	1.60	\$ 120,879	\$ 11,604	\$ 7,736	\$ 140,220	Assume bring in 40%, truck measure
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -	
1.10	Install substation 8" pad base	8,954	SY	11.00	6.00	4.00	\$ 98,494	\$ 53,724	\$ 35,816	\$ 188,034	Estimate based on 8" base
1.11	Site Surfacing - Aggregate 6" Thick	8,954	SY	16.50	4.50	3.00	\$ 147,741	\$ 40,293	\$ 26,862	\$ 214,896	Estimate based on 4" surface stone
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,285	LF	13.85	13.85	6.92	\$ 17,795	\$ 17,795	\$ 8,897	\$ 44,487	Perimeter-gates W'. Assume grounding every 100'
1.13	24' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650	Including concrete pad for the doors
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -	Including concrete pad for the doors
1.15	Storm drain-4" & 15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	328,812.00	38,400.00	25,368.00	\$ 328,812	\$ 38,400	\$ 25,368	\$ 392,580	Crew 4- 10 hr/day
1.16	Seeding	25,302	SF	1.50	1.50	1.00	\$ 37,953	\$ 37,953	\$ 25,302	\$ 101,208	Slop on north side of the drive way and station
1.17	Erosion Control-Silt fence install & remove	2,307	LF	2.41	3.16	0.72	\$ 5,560	\$ 7,290	\$ 1,661	\$ 14,511	Qty based on site perimeter plus 50% rework
1.18	Temporary fencing	1,538	LF	7.50	5.25	2.25	\$ 11,535	\$ 8,075	\$ 3,461	\$ 23,070	Perimeter
1.19	Substation entrance with asphalt	1,085	SY	19.50	26.00	19.50	\$ 21,164	\$ 28,219	\$ 21,164	\$ 70,547	24' wide with asphalt-
1.20	Guardrail	532	LF	24.00	32.00	24.00	\$ 12,768	\$ 17,024	\$ 12,768	\$ 42,560	
1.21	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550	
1.22	Retaining Wall	1,140	LF	312.00	234.00	234.00	\$ 355,680	\$ 266,760	\$ 266,760	\$ 889,200	No info on dwg
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955	
2. SUBSTATION FOUNDATIONS											
2.1	345kV, Lightning mast	36	CY	703.89	804.44	502.78	\$ 25,072	\$ 28,654	\$ 17,909	\$ 71,635	(1) @ 17.81cu.yds/str- Attch B Qty
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 36.66cu.yds/str
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 7.92cu.yds/str
2.4	345kV, Bus support-3 Ph, low	33	CY	703.89	804.44	502.78	\$ 23,355	\$ 26,691	\$ 16,682	\$ 66,728	(2) @ 5.53cu.yds/str
2.5	345kV, Bus support-1 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279	(1) @ 7.92cu.yds/str
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 6.6cu.yds/str
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.06cu.yds/str
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.6cu.yds/str
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.06cu.yds/str
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556	(2) @ 5.35cu.yds/str
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 5.35cu.yds/str
2.12	345kV, Disconnect Switch - (Double Break)	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135	(4) @ 7.92cu.yds/str as shown in Att B
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 328cu.yds/str
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 305cu.yds/str
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 126cu.yds/str
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 445cu.yds/str

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 20cu.yds/str
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 20cu.yds/str
2.21	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834	(1) @ 5.35cu.yds/str
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 188cu.yds/str
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 154cu.yds/str
2.21	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.45cu.yds/str
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 5.35cu.yds/str
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.06cu.yds/str
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 6.06cu.yds/str
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.06cu.yds/str
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 5.35cu.yds/str
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 18.19cu.yds/str
2.28	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(5) @ 7.92cu.yds/str
2.29	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -	Assume 30' H
2.30	Precast Concrete Piles-12"X80'	-	EA								
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 0.75cu.yds/str
2.32	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -	
TOTAL - 345KV FOUNDATION							\$ 227,559	\$ 260,067	\$ 162,542	\$ 650,169	
3. SUBSTATION STRUCTURES											
3.1	345kV, Lightning mast	2	EA	23,400.00	14,040.00	9,360.00	\$ 46,800	\$ 28,080	\$ 18,720	\$ 93,600	Att B Qty, Developer est only 1
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -	
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.4	345kV, Bus support-3 Ph, low	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832	
3.5	345kV, Bus support-1 Ph	10	EA	4,810.00	2,886.00	1,924.00	\$ 48,100	\$ 28,860	\$ 19,240	\$ 96,200	
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832	
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.12	345kV, Disconnect Switch - (Double Break)	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440	Developer est based on 18 pantograph switches, Att B shows 6 AL double break switches
3.14	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580	
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -	
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -	
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -	
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -	
3.19	AL Bus Tubing, 5" SCH 80	636	LF	25.00	184.94	123.29	\$ 15,900	\$ 117,621	\$ 78,414	\$ 211,934	
3.20	AL Bus fittings	1	LS	19,080.00	19,080.00	9,540.00	\$ 19,080	\$ 19,080	\$ 9,540	\$ 47,700	
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 280,966	\$ 288,799	\$ 189,353	\$ 759,118	
4. MAJOR EQUIPMENT											
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -	
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -	
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496	
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -	
4.5	345kV, Disconnect Switch - (Double Break)	3	EA	68,900.00	21,703.50	9,301.50	\$ 206,700	\$ 65,111	\$ 27,905	\$ 299,715	
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -	
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -	
4.11	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -	
4.12	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -	
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -	
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -	
4.15	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250	
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -	
4.18	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -	
4.19	138kV, Disconnect Switch	0	EA		11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -	
4.20	138kV, Cable sealing end	0	EA		3,150.00	1,350.00	\$ -	\$ -	\$ -	\$ -	
4.21	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -	
4.22	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -	
4.23	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -	
4.24	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -	
4.25	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -	
TOTAL - MAJOR EQUIPMENT							\$ 527,046	\$ 163,391	\$ 70,025	\$ 760,461	
5. LOW VOLTAGE & CONTROL CABLE											
5.1	Control cables	1,800	LF	5.30	1.43	0.29	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630	
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -	
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 9,536	\$ 2,579	\$ 516	\$ 12,630	
6. CONDUIT & CABLE TRENCH											
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -	
6.2	Conduit, PVC, 4", SCH 40	450	LF	11.15	10.80	5.40	\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,308	
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -	
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -	

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -	
6.6	Cable Trench	725	LF	266.50	53.04	13.26	\$ 193,213	\$ 38,454	\$ 9,614	\$ 241,280	
6.7											
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -	
6.9							\$ -	\$ -	\$ -	\$ -	
TOTAL - CONDUIT & CABLE TRENCH							\$ 198,230	\$ 43,314	\$ 12,044	\$ 253,588	
7. GROUND GRID											
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,780	LF	2.09	3.42	1.46	\$ 12,086	\$ 19,740	\$ 8,460	\$ 40,287	
7.2	Caweld, DSA, 4/0 , T, CROSS	160	EA	165.00	75.00		\$ 26,400	\$ 12,000	\$ -	\$ 38,400	
7.3	Ground Rod, 3/4" x 15'	135	EA	135.00	67.50	7.50	\$ 18,225	\$ 9,113	\$ 1,013	\$ 28,350	
TOTAL - GROUND GRID							\$ 56,711	\$ 40,853	\$ 9,473	\$ 107,037	
8. CONTROL ENCLOSURE											
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -	
8.2	Primary Line Relays (Pilot): SEL-411L	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -	Qty & cost provided by Sub Station Eng
8.3	Backup Line Relays (Pilot): GE L90	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -	Qty & cost provided by Sub Station Eng
8.4	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -	Qty & cost provided by Sub Station Eng
8.5	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -	Qty & cost provided by Sub Station Eng
8.6	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -	Qty & cost provided by Sub Station Eng
8.7	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -	Qty & cost provided by Sub Station Eng
8.8	HMI Panel	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -	Qty & cost provided by Sub Station Eng
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -	SECo price battery
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -	
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -	
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -	
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -	
1 - New Rochelle 345kV Substation							\$ 2,486,281	\$ 1,650,552	\$ 1,053,122	\$ 5,189,956	Total Direct Costs
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS											
	Contractor Mobilization / Demobilization										
9.1	Mob / Demob	1.0	LS		94,628.62	40,555.12	\$ -	\$ 94,629	\$ 40,555	\$ 135,184	5% of LA+EQ
	Project Management, Material Handling & Amenities										
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900	Assumes PM, Scheduler/Project Controls and a Cost Estimator will support pre-con stage full time.
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		207,598.24		\$ -	\$ 207,598	\$ -	\$ 207,598	Include all PM Staff, Per Diems, Vehicles and Expenses for construction/close out.
9.4	Utility PM and Project Oversight	1.0	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900	
9.5	Site Accommodation, Facilities, Storage	1.0	LS	51,899.56			\$ 51,900	\$ -	\$ -	\$ 51,900	
	Engineering										
9.6	Design Engineering	1.00	LS		415,196.48		\$ -	\$ 415,196	\$ -	\$ 415,196	
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -	
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750	5 Test Bores Per Yard.
9.9	Surveying/Staking	1.00	Site		36,329.69		\$ -	\$ 36,330	\$ -	\$ 36,330	
	Testing & Commissioning										
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		194,623.35		\$ -	\$ 194,623	\$ -	\$ 194,623	
	Permitting and Additional Costs										
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547	6P-6A, Sun&Sat all day. Security guard rate avg in NJ \$14.72/HR, used \$18
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900	
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -	
9.14	Warranties / LOC's	1.00	LS		15,569.87		\$ -	\$ 15,570	\$ -	\$ 15,570	
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -	
9.16	Real Estate (Acquisition)	1.00	LS			2,393,162.00	\$ -	\$ -	\$ 2,393,162	\$ 2,393,162	
9.17	Legal Fees (Real estate)	1.00	LS		-	71,794.86	\$ -	\$ -	\$ 71,795	\$ 71,795	3% of the real estate cost
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP)
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000	2% based on contract value
9.20	Sales Tax on Materials	8.8%	LS	2,486,281.16			\$ 218,793	\$ -	\$ -	\$ 218,793	8.8%
9.21	Fees for permits, including roadway, railroad, building or other local permit:	1.00	LS		5,189.96		\$ -	\$ 5,190	\$ -	\$ 5,190	
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 270,692	\$ 1,145,032	\$ 2,774,612	\$ 4,190,336	

Propel NY - TO48 BS2

2 - Shore Road 345 kV GIS Substation

Total: \$ 44,019,357

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
2 - Shore Road 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,979,553	\$ 2,997,434	\$ 2,009,487	\$ 6,986,474
2. SUBSTATION FOUNDATIONS	\$ 1,967,614	\$ 1,826,216	\$ 1,292,210	\$ 5,086,040
3. SUBSTATION STRUCTURES	\$ 532,556	\$ 458,935	\$ 289,685	\$ 1,281,176
4. MAJOR EQUIPTMENT	\$ 4,777,734	\$ 748,727	\$ 420,349	\$ 5,946,810
5. LOW VOLTAGE & CONTROL CABLE	\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
6. CONDUIT & CABLE TRENCH	\$ 957,512	\$ 591,799	\$ 304,206	\$ 1,853,518
7. GROUND GRID	\$ 75,011	\$ 54,328	\$ 12,708	\$ 142,047
8. CONTROL ENCLOSURE	\$ 841,656	\$ 701,803	\$ 258,853	\$ 1,802,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,218,291	\$ 5,044,983	\$ 1,624,428	\$ 7,887,702
SUBTOTAL (Costs):	\$ 12,426,211	\$ 12,444,853	\$ 6,216,052	\$ 31,087,116
CONTRACTOR MARK-UP (OH&P)	\$ 2,236,718	\$ 2,240,073	\$ 1,118,889	\$ 5,595,681
SUBTOTAL:	\$ 14,662,929	\$ 14,684,926	\$ 7,334,942	\$ 36,682,797
CONTINGENCY ON ENTIRE PROJECT	\$ 2,932,586	\$ 2,936,985	\$ 1,466,988	\$ 7,336,559
TOTAL:	\$ 17,595,515	\$ 17,621,911	\$ 8,801,930	\$ 44,019,357

Description of Work: New greenfield 345 kV Shore Road Substation, to be located at 375 Shore Road, in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. The 345 kV Shore Road Substation will serve as the transition station. A new 345 kV underground terrestrial transmission line will be converted into two (2) marine transmission lines for crossing Long Island Sound. Also, a 345 kV shunt reactor will be installed for compensation.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2 - Shore Road 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,600	\$ 14,400	\$ 36,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,028	SY	4.85	7.20	4.80	\$ 9,835	\$ 14,601	\$ 9,734	\$ 34,170
1.4	Strip and Dispose Top Soil	32,267	CY		24.50	10.50	\$ -	\$ 790,533	\$ 338,800	\$ 1,129,333
1.5	Site Grading- Excavation for Substation Pad- Rock	1,613	CY		243.00	162.00	\$ -	\$ 392,040	\$ 261,360	\$ 653,400
1.6	Site Grading- Excavation for Substation Pad	32,267	CY		9.00	6.00	\$ -	\$ 290,400	\$ 193,600	\$ 484,000
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	17,424	CY		21.00	9.00	\$ -	\$ 365,904.00	\$ 156,816.00	\$ 522,720.00
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	26,136	CY		2.40	1.60	\$ -	\$ 62,726	\$ 41,818	\$ 104,544
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	17,424	CY	25.00	2.40	1.60	\$ 435,600	\$ 41,818	\$ 27,878	\$ 505,296
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	9,680	SY	11.00	6.00	4.00	\$ 106,480	\$ 58,080	\$ 38,720	\$ 203,280
1.12	Site Surfacing - Aggregate 6" Thick	9,680	SY	16.50	4.50	3.00	\$ 159,720	\$ 43,560	\$ 29,040	\$ 232,320
1.13	7' Station Fence w/ Barbed Wire & Grounding	972	LF	13.85	13.85	6.92	\$ 13,460	\$ 13,460	\$ 6,730	\$ 33,651
1.14	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.15	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	92,595.69	30,720.00	38,052.00	\$ 92,596	\$ 30,720	\$ 38,052	\$ 161,368
1.17	Seeding	6,320	SF	1.50	1.50	1.00	\$ 9,480	\$ 9,480	\$ 6,320	\$ 25,280
1.18	Erosion Control-Silt fence install & remove	1,545	LF	2.41	3.16	0.72	\$ 3,723	\$ 4,882	\$ 1,112	\$ 9,718
1.19	Temporary fencing	1,030	LF	7.50	5.25	2.25	\$ 7,725	\$ 5,408	\$ 2,318	\$ 15,450
1.20	Substation entrance with asphalt	222	SY	19.50	26.00	19.50	\$ 4,333	\$ 5,778	\$ 4,333	\$ 14,444
1.21	Concrete curb	180	LF	26.00	27.30	11.70	\$ 4,680	\$ 4,914	\$ 2,106	\$ 11,700
1.22	Retaining Wall	712	LF	1,560.00	1,170.00	1,170.00	\$ 1,110,720	\$ 833,040	\$ 833,040	\$ 2,776,800

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,979,553	\$ 2,997,434	\$ 2,009,487	\$ 6,986,474
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	53	CY	703.89	804.44	502.78	\$ 37,609	\$ 42,981	\$ 26,863	\$ 107,453
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph, low	55	CY	703.89	804.44	502.78	\$ 38,925	\$ 44,486	\$ 27,803	\$ 111,214
2.4	345kV, Bus support-1 Ph	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.5	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.10	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.11	345kV, SSVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.15	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.12	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Shunt Reactor with oil containment-200MVAR	834	CY	703.89	804.44	502.78	\$ 587,040	\$ 670,903	\$ 419,314	\$ 1,677,257
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.20	345/138 Kv, Control Enclosure-BLDG with generator pad	165	CY	703.89	804.44	502.78	\$ 116,141	\$ 132,733	\$ 82,958	\$ 331,832
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	Precast Firewall for transformer, PARs, reactors	16,680	SF	25.00	15.00	10.00	\$ 417,000	\$ 250,200	\$ 166,800	\$ 834,000
2.28	Precast Concrete Piles-12"X80'	104	EA	4,800.00	3,600.00	3,600.00	\$ 499,200	\$ 374,400	\$ 374,400	\$ 1,248,000
2.29	Local Control Cabinet foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,967,614	\$ 1,826,216	\$ 1,292,210	\$ 5,086,040
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	3	EA	23,400.00	14,040.00	9,360.00	\$ 70,200	\$ 42,120	\$ 28,080	\$ 140,400
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph, low	5	EA	8,346.00	5,758.74	3,839.16	\$ 41,730	\$ 28,794	\$ 19,196	\$ 89,720
3.4	345kV, Bus support-1 Ph	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.5	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.10	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.11	345kV, SSVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.12	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	345kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.18	AL. Bus Tubing, 5" SCH 80	845	LF	25.00	184.94	123.29	\$ 21,125	\$ 156,273	\$ 104,182	\$ 281,579
3.19	AL. Bus fittings	1	LS	25,350.00	25,350.00	12,675.00	\$ 25,350	\$ 25,350	\$ 12,675	\$ 63,375
3.20	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 532,556	\$ 458,935	\$ 289,685	\$ 1,281,176
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, SSVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.5	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.6	345/138KV, Power Transformer	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-200MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		331,900.00	217,600.00	\$ -	\$ 331,900	\$ 217,600	\$ 549,500
4.12	345kV, Phase Angle Regulator	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	1	EA	980,000.00	57,239.00	24,531.00	\$ 980,000	\$ 57,239	\$ 24,531	\$ 1,061,770
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA		10,080.00	4,320.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	12	EA	8,450.00	5,460.00	2,340.00	\$ 101,400	\$ 65,520	\$ 28,080	\$ 195,000
4.16	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 4,777,734	\$ 748,727	\$ 420,349	\$ 5,946,810
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	14,400	LF	5.30	1.43	0.29	\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,150	LF	11.15	10.80	5.40	\$ 35,123	\$ 34,020	\$ 17,010	\$ 86,153
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	900	LF	266.50	53.04	13.26	\$ 239,850	\$ 47,736	\$ 11,934	\$ 299,520
6.7										
6.8	138kV UG- Conduit	1,100	LF	81.00	107.00	57.00	\$ 89,100	\$ 117,700	\$ 62,700	\$ 269,500
6.9	138kV UG- Cable	3,300	LF	156.00	94.00	62.00	\$ 514,800	\$ 310,200	\$ 204,600	\$ 1,029,600
6.10	138kV UG- Termination	6	EA	9,360.00	11,700.00		\$ 56,160	\$ 70,200	\$ -	\$ 126,360
6.11	Fiber Optic Cable	1,100	LF	7.40	3.33	2.22	\$ 8,137	\$ 3,664	\$ 2,442	\$ 14,243
6.12	Ground Continuity Conductor	1,100	LF	13.04	7.53	5.02	\$ 14,343	\$ 8,280	\$ 5,520	\$ 28,142
TOTAL - CONDUIT & CABLE TRENCH							\$ 957,512	\$ 591,799	\$ 304,206	\$ 1,853,518
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,760	LF	2.09	3.42	1.46	\$ 16,226	\$ 26,503	\$ 11,358	\$ 54,087
7.2	Caweld, DSA, 4/0 , T, CROSS	209	EA	165.00	75.00		\$ 34,485	\$ 15,675	\$ -	\$ 50,160
7.3	Ground Rod, 3/4" x 15'	180	EA	135.00	67.50	7.50	\$ 24,300	\$ 12,150	\$ 1,350	\$ 37,800
TOTAL - GROUND GRID							\$ 75,011	\$ 54,328	\$ 12,708	\$ 142,047
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	238,218.43	166,752.90	71,465.53	\$ 238,218	\$ 166,753	\$ 71,466	\$ 476,437
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 841,656	\$ 701,803	\$ 258,853	\$ 1,802,312
2 - Shore Road 345 kV GIS Substation							\$ 11,207,920	\$ 7,399,870	\$ 4,591,624	\$ 23,199,414
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		419,702.30	179,872.41	\$ -	\$ 419,702	\$ 179,872	\$ 599,575
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		927,976.58		\$ -	\$ 927,977	\$ -	\$ 927,977
9.4	Utility PM and Project Oversight	1.0	LS		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.5	Site Accommodation, Facilities, Storage	1.0	LS	231,994.14			\$ 231,994	\$ -	\$ -	\$ 231,994
	Engineering									
9.6	Design Engineering	1.00	LS		1,855,953.15		\$ -	\$ 1,855,953	\$ -	\$ 1,855,953
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		162,395.90		\$ -	\$ 162,396	\$ -	\$ 162,396
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		869,978.04		\$ -	\$ 869,978	\$ -	\$ 869,978
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		69,598.24		\$ -	\$ 69,598	\$ -	\$ 69,598
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			539,277.00	\$ -	\$ -	\$ 539,277	\$ 539,277
9.17	Legal Fees (Real estate)	1.00	LS		-	16,178.31	\$ -	\$ -	\$ 16,178	\$ 16,178
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 880,000	\$ -	\$ -	\$ 880,000	\$ 880,000
9.20	Sales Tax on Materials	8.80%	LS	11,207,920.27			\$ 986,297	\$ -	\$ -	\$ 986,297
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		23,199.41		\$ -	\$ 23,199	\$ -	\$ 23,199
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,218,291	\$ 5,044,983	\$ 1,624,428	\$ 7,887,702

3 - Ruland Road 345/138 kV Substation

Propel NY - T048 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,542,746	\$ 1,290,254	\$ 735,698	\$ 3,568,698
2. SUBSTATION FOUNDATIONS	\$ 5,768,874	\$ 3,276,141	\$ 2,200,338	\$ 11,245,354
3. SUBSTATION STRUCTURES	\$ 1,770,980	\$ 1,373,450	\$ 844,497	\$ 3,988,927
4. MAJOR EQUIPMENT	\$ 38,613,141	\$ 6,875,511	\$ 2,460,010	\$ 47,948,662
5. LOW VOLTAGE & CONTROL CABLE	\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
6. CONDUIT & CABLE TRENCH	\$ 1,987,196	\$ 1,276,679	\$ 613,471	\$ 3,877,347
7. GROUND GRID	\$ 287,968	\$ 209,061	\$ 49,194	\$ 546,222
8. CONTROL ENCLOSURE	\$ 902,031	\$ 773,925	\$ 247,106	\$ 1,923,062
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,244,970	\$ 15,510,257	\$ 4,317,259	\$ 25,072,487
SUBTOTAL (Costs):	\$ 56,485,023	\$ 30,684,551	\$ 11,487,429	\$ 98,657,003
CONTRACTOR MARK-UP (OH&P)	\$ 10,167,304	\$ 5,523,219	\$ 2,067,737	\$ 17,758,260
SUBTOTAL:	\$ 66,652,327	\$ 36,207,770	\$ 13,555,166	\$ 116,415,263
CONTINGENCY ON ENTIRE PROJECT	\$ 13,330,465	\$ 7,241,554	\$ 2,711,033	\$ 23,283,053
TOTAL:	\$ 79,982,792	\$ 43,449,324	\$ 16,266,199	\$ 139,698,316

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3 - Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 53,051	\$ 35,367	\$ 88,418
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,476	SY	4.85	7.20	4.80	\$ 21,709	\$ 32,227	\$ 21,485	\$ 75,421
1.4	Strip and Dispose Top Soil	7,925	CY		24.50	10.50	\$ -	\$ 194,160	\$ 83,212	\$ 277,372
1.5	Site Grading- Excavation for Substation Pad	23,775	CY		9.00	6.00	\$ -	\$ 213,972	\$ 142,648	\$ 356,621
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	12,838	CY		21.00	9.00	\$ -	\$ 269,605.33	\$ 115,545.14	\$ 385,150.47
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	19,258	CY		2.40	1.60	\$ -	\$ 46,218	\$ 30,812	\$ 77,030
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	12,838	CY	25.00	2.40	1.60	\$ 320,959	\$ 30,812	\$ 20,541	\$ 372,312
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	23,775	SY	11.00	6.00	4.00	\$ 261,522	\$ 142,648	\$ 95,099	\$ 499,269
1.11	Site Surfacing - Aggregate 6" Thick	23,775	SY	16.50	4.50	3.00	\$ 392,283	\$ 106,986	\$ 71,324	\$ 570,593
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,896	LF	13.85	13.85	6.92	\$ 26,256	\$ 26,256	\$ 13,128	\$ 65,640
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	3' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	17,200	SF	1.50	1.50	1.00	\$ 25,800	\$ 25,800	\$ 17,200	\$ 68,800
1.17	Erosion Control-Silt fence install & remove	2,913	LF	2.41	3.16	0.72	\$ 7,020	\$ 9,205	\$ 2,097	\$ 18,323
1.18	Temporary fencing	1,942	LF	7.50	5.25	2.25	\$ 14,565	\$ 10,196	\$ 4,370	\$ 29,130
1.19	Substation entrance with asphalt	135	SY	19.50	26.00	19.50	\$ 2,637	\$ 3,516	\$ 2,637	\$ 8,789
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,542,746	\$ 1,290,254	\$ 735,698	\$ 3,568,698
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	107	CY	703.89	804.44	502.78	\$ 75,217	\$ 85,962	\$ 53,727	\$ 214,906
2.2	345kV, A Frame 70'- ONE BAY	147	CY	703.89	804.44	502.78	\$ 103,218	\$ 117,963	\$ 73,727	\$ 294,908
2.3	345kV, A Frame 70'- TWO BAY	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.4	345kV, Bus support-3 Ph	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	238	CY	703.89	804.44	502.78	\$ 167,243	\$ 191,135	\$ 119,459	\$ 477,837
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.12	345kV, CCVT	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.13	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.14	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.15	345kV, Shunt Reactor with oil containment-200MVAR			703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.19	345kV, Circuit Breaker (PASS)	100	CY	703.89	804.44	502.78	\$ 70,389	\$ 80,444	\$ 50,278	\$ 201,110
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-3 Ph, low	107	CY	703.89	804.44	502.78	\$ 75,316	\$ 86,075	\$ 53,797	\$ 215,188
2.26	138kV, Bus support-1 Ph, low	73	CY	703.89	804.44	502.78	\$ 51,440	\$ 58,788	\$ 36,743	\$ 146,971
2.27	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.28	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.29	138kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'-ONE BAY	73	CY	703.89	804.44	502.78	\$ 51,215	\$ 58,531	\$ 36,582	\$ 146,328
2.32	138kV, A Frame 50'-TWO BAY		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	1,200	SF	25.00	15.00	10.00	\$ 30,000	\$ 18,000	\$ 12,000	\$ 60,000
2.35	Precast Concrete Piles-12"X80'	190	EA	18,000.00	3,200.00	2,800.00	\$ 3,420,000	\$ 608,000	\$ 532,000	\$ 4,560,000
2.36	Local Control Cabinet foundation	3	CY	703.89	804.44	502.78	\$ 2,086	\$ 2,384	\$ 1,490	\$ 5,959
TOTAL - 345KV FOUNDATION							\$ 5,768,874	\$ 3,276,141	\$ 2,200,338	\$ 11,245,354
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	6	EA	23,400.00	14,040.00	9,360.00	\$ 140,400	\$ 84,240	\$ 56,160	\$ 280,800
3.2	345kV, A Frame 70'- ONE BAY	1	EA	48,100.00	28,860.00	19,240.00	\$ 48,100	\$ 28,860	\$ 19,240	\$ 96,200
3.3	345kV, A Frame 70'- TWO BAY	2	EA	80,327.00	48,196.20	32,130.80	\$ 160,654	\$ 96,392	\$ 64,262	\$ 321,308
3.4	345kV, Bus support-3 Ph	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	30	EA	4,810.00	2,886.00	1,924.00	\$ 144,300	\$ 86,580	\$ 57,720	\$ 288,600
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.12	345kV, CCVT	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.14	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.15	138kV, Bus support-3 Ph, low	10	EA	4,173.00	2,879.76	1,919.84	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.16	138kV, Bus support-1 Ph, low	18	EA	2,782.00	1,919.84	1,279.89	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.17	138kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.18	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.19	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.21	138kV, A Frame 50'-ONE BAY	1	EA	33,000.00	19,800.00	13,200.00	\$ 33,000	\$ 19,800	\$ 13,200	\$ 66,000
3.22	138kV, A Frame 50'-TWO BAY	1	EA	55,110.00	33,066.00	22,044.00	\$ 55,110	\$ 33,066	\$ 22,044	\$ 110,220
3.25	AL. Bus Tubing, 5" SCH 80	2,181	LF	25.00	184.94	123.29	\$ 54,525	\$ 403,350	\$ 268,900	\$ 726,775
3.26	AL. Bus fittings	1	LS	65,430.00	65,430.00	32,715.00	\$ 65,430	\$ 65,430	\$ 32,715	\$ 163,575
3.27	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	\$ 591,165	\$ 252,972	\$ 108,416	\$ 952,553
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,770,980	\$ 1,373,450	\$ 844,497	\$ 3,988,927
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.4	345kV, CCVT	12	EA	16,900.00	15,941.99	6,832.28	\$ 202,800	\$ 191,304	\$ 81,987	\$ 476,091
4.5	345kV, Disconnect Switch	2	EA	57,720.00	34,632.00	23,088.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.7	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-200MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		3,177,700.00	217,600.00	\$ -	\$ 3,177,700	\$ 217,600	\$ 3,395,300
4.12	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- Transformer	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.14	345kV, Circuit Breaker (PASS)	5	EA	980,000.00	57,239.00	24,531.00	\$ 4,900,000	\$ 286,195	\$ 122,655	\$ 5,308,850
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	3	EA	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.23	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	\$ 180,000	\$ 143,462	\$ 61,484	\$ 384,945
4.24	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 38,613,141	\$ 6,875,511	\$ 2,460,010	\$ 47,948,662

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	69,300	LF	5.30	1.43	0.29	\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	15,450	LF	11.15	10.80	5.40	\$ 172,268	\$ 166,860	\$ 83,430	\$ 422,558
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,800	LF	266.50	53.04	13.26	\$ 479,700	\$ 95,472	\$ 23,868	\$ 599,040
6.7										
6.8	138kV UG- Conduit	1,775	LF	81.00	107.00	57.00	\$ 143,775	\$ 189,925	\$ 101,175	\$ 434,875
6.9	138kV UG- Cable	6,325	LF	156.00	94.00	62.00	\$ 986,700	\$ 594,550	\$ 392,150	\$ 1,973,400
6.10	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.11	Fiber Optic Cable	1,775	LF	7.40	3.33	2.22	\$ 13,130	\$ 5,912	\$ 3,941	\$ 22,983
6.12	Ground Continuity Conductor	1,775	LF	13.04	7.53	5.02	\$ 23,144	\$ 13,360	\$ 8,907	\$ 45,412
							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,987,196	\$ 1,276,679	\$ 613,471	\$ 3,877,347
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,920	LF	2.09	3.42	1.46	\$ 62,563	\$ 102,186	\$ 43,794	\$ 208,542
7.2	Caweld, DSA, 4/0 , T, CROSS	777	EA	165.00	75.00		\$ 128,205	\$ 58,275	\$ -	\$ 186,480
7.3	Ground Rod, 3/4" x 15'	720	EA	135.00	67.50	7.50	\$ 97,200	\$ 48,600	\$ 5,400	\$ 151,200
TOTAL - GROUND GRID							\$ 287,968	\$ 209,061	\$ 49,194	\$ 546,222
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.9	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 902,031	\$ 773,925	\$ 247,106	\$ 1,923,062
3 - Ruland Road 345/138 kV Substation							\$ 51,240,053	\$ 15,174,293	\$ 7,170,170	\$ 73,584,516
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		782,056.20	335,166.94	\$ -	\$ 782,056	\$ 335,167	\$ 1,117,223
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,943,380.64		\$ -	\$ 2,943,381	\$ -	\$ 2,943,381
9.4	Utility PM and Project Oversite	1.0	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.5	Site Accommodation, Facilities, Storage	1.0	LS	735,845.16			\$ 735,845	\$ -	\$ -	\$ 735,845
	Engineering									
9.6	Design Engineering	1.00	LS		5,886,761.28		\$ -	\$ 5,886,761	\$ -	\$ 5,886,761
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		515,091.61		\$ -	\$ 515,092	\$ -	\$ 515,092
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,759,419.35		\$ -	\$ 2,759,419	\$ -	\$ 2,759,419
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		108,024.84		\$ -	\$ 108,025	\$ -	\$ 108,025
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.14	Warranties / LOC's	1.00	LS		220,753.55		\$ -	\$ 220,754	\$ -	\$ 220,754
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,780,000	\$ -	\$ -	\$ 2,780,000	\$ 2,780,000
9.20	Sales Tax on Materials	8.80%	LS	51,240,053.07			\$ 4,509,125	\$ -	\$ -	\$ 4,509,125
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		73,584.52		\$ -	\$ 73,585	\$ -	\$ 73,585
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,244,970	\$ 15,510,257	\$ 4,317,259	\$ 25,072,487

Propel NY - TO48 BS2

4 - Barrett 345 kV Substation

Total: \$ 137,133,786

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
4 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,464,301	\$ 1,575,393	\$ 879,099	\$ 3,918,792.73
2. SUBSTATION FOUNDATIONS	\$ 6,166,639	\$ 3,951,944	\$ 2,612,528	\$ 12,731,110.99
3. SUBSTATION STRUCTURES	\$ 1,418,256	\$ 961,546	\$ 574,724	\$ 2,954,526.06
4. MAJOR EQUIPMENT	\$ 34,692,557	\$ 3,832,609	\$ 2,406,500	\$ 40,931,665.70
5. LOW VOLTAGE & CONTROL CABLE	\$ 270,173	\$ 73,058	\$ 14,612	\$ 357,841.50
6. CONDUIT & CABLE TRENCH	\$ 580,105	\$ 202,980	\$ 78,285	\$ 861,370.00
7. GROUND GRID	\$ 211,917	\$ 153,774	\$ 36,139	\$ 401,830.00
8. CONTROL ENCLOSURE	\$ 1,263,059	\$ 1,035,176	\$ 346,883	\$ 2,645,118.46
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,701,919	\$ 18,240,656	\$ 9,101,063	\$ 32,043,638.45
SUBTOTAL (Costs):	\$ 50,768,926	\$ 30,027,135	\$ 16,049,833	\$ 96,845,894
CONTRACTOR MARK-UP (OH&P)	\$ 9,138,407	\$ 5,404,884	\$ 2,888,970	\$ 17,432,261
SUBTOTAL:	\$ 59,907,332	\$ 35,432,020	\$ 18,938,803	\$ 114,278,155
CONTINGENCY ON ENTIRE PROJECT	\$ 11,981,466	\$ 7,086,404	\$ 3,787,761	\$ 22,855,630.96
TOTAL:	\$ 71,888,799	\$ 42,518,424	\$ 22,726,563	\$ 137,133,786

Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of Hempstead, Nassau County. The New 345 kV Barrett Substation will serve as the main Point of Interconnection (“POI”)between the generation and transmission operator. The New substation will step up the 138 kV POI voltage to 345 kV, and a new 345 kV underground line will be connected

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.7	ACRE	-	10,800.00	7,200.00	\$ -	\$ 72,360	\$ 48,240	\$ 120,600
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,683	SY	4.85	7.20	4.80	\$ 22,713	\$ 33,718	\$ 22,479	\$ 78,910
1.4	Strip and Dispose Top Soil	10,809	CY		24.50	10.50	\$ -	\$ 264,829	\$ 113,498	\$ 378,327
1.5	Site Grading- Excavation for Substation Pad	32,428	CY		9.00	6.00	\$ -	\$ 291,852	\$ 194,568	\$ 486,420
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	17,511	CY		21.00	9.00	\$ -	\$ 367,733.52	\$ 157,600.08	\$ 525,333.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	26,267	CY		2.40	1.60	\$ -	\$ 63,040	\$ 42,027	\$ 105,067
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	17,511	CY	25.00	2.40	1.60	\$ 437,778	\$ 42,027	\$ 28,018	\$ 507,822
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	32,428	SY	11.00	6.00	4.00	\$ 356,708	\$ 194,568	\$ 129,712	\$ 680,988
1.11	Site Surfacing - Aggregate 6" Thick	32,428	SY	16.50	4.50	3.00	\$ 535,062	\$ 145,926	\$ 97,284	\$ 778,272
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,087	LF	13.85	13.85	6.92	\$ 28,901	\$ 28,901	\$ 14,450	\$ 72,252
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH AND INLET	1	EA	20,235.06	19,200.00	6,342.00	\$ 20,235	\$ 19,200	\$ 6,342	\$ 45,777
1.16	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.17	Erosion Control-Silt fence install & remove	3,131	LF	2.41	3.16	0.72	\$ 7,545	\$ 9,892	\$ 2,254	\$ 19,691
1.18	Temporary fencing	2,087	LF	7.50	5.25	2.25	\$ 15,653	\$ 10,957	\$ 4,696	\$ 31,305
1.19	Substation entrance with asphalt	490	SY	19.50	26.00	19.50	\$ 9,555	\$ 12,740	\$ 9,555	\$ 31,850
1.20	Concrete curb	160	LF	26.00	27.30	11.70	\$ 4,160	\$ 4,368	\$ 1,872	\$ 10,400
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,464,301	\$ 1,575,393	\$ 879,099	\$ 3,918,793
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	53	CY	703.89	804.44	502.78	\$ 37,609	\$ 42,981	\$ 26,863	\$ 107,453
2.2	345kV, A Frame 70'- ONE BAY	293	CY	703.89	804.44	502.78	\$ 206,435	\$ 235,926	\$ 147,454	\$ 589,815
2.3	345kV, A Frame 70'- TWO BAY	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.4	345kV, Bus support-3 Ph	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.5	345kV, Bus support-1 Ph	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.6	345kV, Cable sealing end	18	CY	703.89	804.44	502.78	\$ 12,797	\$ 14,625	\$ 9,140	\$ 36,562
2.7	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.8	345kV, CCVT	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.9	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.10	345/138KV, Power Transformer with oil containment	825	CY	703.89	804.44	502.78	\$ 580,705	\$ 663,663	\$ 414,789	\$ 1,659,158
2.11	345kV, Shunt Reactor with oil containment-300MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.12	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.14	345kV, Circuit Breaker (PASS)	100	CY	703.89	804.44	502.78	\$ 70,389	\$ 80,444	\$ 50,278	\$ 201,110
2.15	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.16	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.17	138kV, Phase Angle Regulator	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.19	138kV, Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.20	138kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	Firewall Foundation	697	CY	703.89	804.44	502.78	\$ 490,580	\$ 560,663	\$ 350,414	\$ 1,401,656
2.22	Precast Firewall for transformer	10,500	SF	25.00	15.00	10.00	\$ 262,500	\$ 157,500	\$ 105,000	\$ 525,000
2.23	Precast Concrete Piles-12"X80'	170	EA	18,000.00	3,200.00	2,800.00	\$ 3,060,000	\$ 544,000	\$ 476,000	\$ 4,080,000
TOTAL - 345KV FOUNDATION							\$ 6,166,639	\$ 3,951,944	\$ 2,612,528	\$ 12,731,111
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	3	EA	23,400.00	14,040.00	9,360.00	\$ 70,200	\$ 42,120	\$ 28,080	\$ 140,400
3.2	345kV, A Frame 70'- ONE BAY	2	EA	48,100.00	28,860.00	19,240.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.3	345kV, A Frame 70'- TWO BAY	2	EA	80,327.00	48,196.20	32,130.80	\$ 160,654	\$ 96,392	\$ 64,262	\$ 321,308
3.4	345kV, Bus support-3 Ph	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.5	345kV, Bus support-1 Ph	24	EA	4,810.00	2,886.00	1,924.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.6	345kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.7	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.8	345kV, CCVT	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.9	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.10	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.11	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.12	138kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.13	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	AL. Bus Tubing, 5" SCH 80	1,215	LF	25.00	184.94	123.29	\$ 30,375	\$ 224,700	\$ 149,800	\$ 404,874
3.15	AL. Bus fittings	1	LS	36,450.00	36,450.00	18,225.00	\$ 36,450	\$ 36,450	\$ 18,225	\$ 91,125
3.16	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	\$ 591,165	\$ 252,972	\$ 108,416	\$ 952,553
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,418,256	\$ 961,546	\$ 574,724	\$ 2,954,526
4. MAJOR EQUIPMENT										
4.1	345/138kV, Power Transformer	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.2	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.3	345kV, Shunt Reactor with oil containment-300MVAR	1	EA	3,633,158.00	3,520.00	880.00	\$ 3,633,158	\$ 3,520	\$ 880	\$ 3,637,558
4.4	Transport & Testing- Shunt Reactor	1	EA		375,400.00	246,600.00	\$ -	\$ 375,400	\$ 246,600	\$ 622,000
4.5	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.6	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.7	345kV Circuit Breakers, PASS	5	EA	98,000.00	57,239.00	24,531.00	\$ 490,000	\$ 286,195	\$ 122,655	\$ 898,850
4.8	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
4.9	345kV, CCVT	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
4.10	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.11	345kV, Surge arrester	3	EA	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.12	Phase Angle Regulating Transformer, 138kV	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	138kV, Cable sealing end	9	EA	37,700.00	11,875.50	5,089.50	\$ 339,300	\$ 106,880	\$ 45,806	\$ 491,985
4.15	138kV, Disconnect Switch	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.16	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.17	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 34,692,557	\$ 3,832,609	\$ 2,406,500	\$ 40,931,666
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	51,000	LF	5.30	1.43	0.29	\$ 270,173	\$ 73,058	\$ 14,612	\$ 357,842
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 270,173	\$ 73,058	\$ 14,612	\$ 357,842
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	10,200	LF	11.15	10.80	5.40	\$ 113,730	\$ 110,160	\$ 55,080	\$ 278,970
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,750	LF	266.50	53.04	13.26	\$ 466,375	\$ 92,820	\$ 23,205	\$ 582,400
6.7							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 580,105	\$ 202,980	\$ 78,285	\$ 861,370
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	22,000	LF	2.09	3.42	1.46	\$ 46,002	\$ 75,137	\$ 32,201	\$ 153,340
7.2	Caweld, DSA, 4/0 , T, CROSS	576	EA	165.00	75.00		\$ 95,040	\$ 43,200	\$ -	\$ 138,240
7.3	Ground Rod, 3/4" x 15'	525	EA	135.00	67.50	7.50	\$ 70,875	\$ 35,438	\$ 3,938	\$ 110,250
TOTAL - GROUND GRID							\$ 211,917	\$ 153,774	\$ 36,139	\$ 401,830
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.11	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.12	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.14	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.15	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.16	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.18	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,263,059	\$ 1,035,176	\$ 346,883	\$ 2,645,118
4 - Barrett 345 kV Substation							\$ 46,067,007	\$ 11,786,479	\$ 6,948,770	\$ 64,802,255
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		655,733.71	281,028.73	\$ -	\$ 655,734	\$ 281,029	\$ 936,762
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		648,022.55		\$ -	\$ 648,023	\$ -	\$ 648,023
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,592,090.22		\$ -	\$ 2,592,090	\$ -	\$ 2,592,090
9.4	Utility PM and Project Oversight	1.0	LS		648,022.55		\$ -	\$ 648,023	\$ -	\$ 648,023
9.5	Site Accommodation, Facilities, Storage	1.0	LS	648,022.55			\$ 648,023	\$ -	\$ -	\$ 648,023
	Engineering									
9.6	Design Engineering	1.00	LS		5,184,180.44		\$ -	\$ 5,184,180	\$ -	\$ 5,184,180
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		453,615.79		\$ -	\$ 453,616	\$ -	\$ 453,616
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,430,084.58		\$ -	\$ 2,430,085	\$ -	\$ 2,430,085
	Permitting and Additional Costs									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.11	Physical Security	1.00	LS		108,024.84		\$ -	\$ 108,025	\$ -	\$ 108,025
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		648,022.55		\$ -	\$ 648,023	\$ -	\$ 648,023
9.13	Environmental-special studies/investigation	1.00	LS		4,600,000.00		\$ -	\$ 4,600,000	\$ -	\$ 4,600,000
9.14	Warranties / LOC's	1.00	LS		194,406.77		\$ -	\$ 194,407	\$ -	\$ 194,407
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,894,111.00	\$ -	\$ -	\$ 5,894,111	\$ 5,894,111
9.17	Legal Fees (Real estate)	1.00	LS		-	176,823.33	\$ -	\$ -	\$ 176,823	\$ 176,823
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,740,000	\$ -	\$ -	\$ 2,740,000	\$ 2,740,000
9.20	Sales Tax on Materials	8.80%	LS	46,067,006.56			\$ 4,053,897	\$ -	\$ -	\$ 4,053,897
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		64,802.26		\$ -	\$ 64,802	\$ -	\$ 64,802
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,701,919	\$ 18,240,656	\$ 9,101,063	\$ 32,043,638

Propel NY - TO48 BS2

5 - Existing EGC 345 kV Upgrade

Total: \$ 28,164,128

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Existing EGC 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 12,000	\$ 8,000	\$ 20,000.00
2. SUBSTATION FOUNDATIONS	\$ 404,484	\$ 462,267	\$ 288,917	\$ 1,155,667.44
3. SUBSTATION STRUCTURES	\$ 193,347	\$ 102,423	\$ 56,236	\$ 352,005.76
4. MAJOR EQUIPTMENT	\$ 3,759,960	\$ 974,686	\$ 644,658	\$ 5,379,304.21
5. LOW VOLTAGE & CONTROL CABLE	\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,710.85
6. CONDUIT & CABLE TRENCH	\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665.00
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,624.92
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 480,017	\$ 1,226,433	\$ 11,054,413	\$ 12,760,863.46
Turnkey cost (HVDC, GIS)	\$ 1,130,444	\$ 678,266	\$ 452,178	\$ 2,260,888
Non-Turnkey cost	\$ 3,968,070	\$ 2,245,583	\$ 11,645,302	\$ 17,858,954
SUBTOTAL (Costs):	\$ 5,098,514	\$ 2,923,849	\$ 12,097,479	\$ 20,119,842
CONTRACTOR MARK-UP (OH&P):	\$ 782,079	\$ 444,901	\$ 2,123,285	\$ 3,350,265
SUBTOTAL:	\$ 5,880,593	\$ 3,368,750	\$ 14,220,764	\$ 23,470,107
CONTINGENCY ON ENTIRE PROJECT	\$ 1,176,119	\$ 673,750	\$ 2,844,153	\$ 4,694,021
TOTAL:	\$ 7,056,711	\$ 4,042,500	\$ 17,064,917	\$ 28,164,128

Description of Work: Upgrades to the existing New York Power Authority (“NYPA”) 345 kV East Garden City Substation, located in the Hamlet of Oceanside, Town of Hempstead, Nassau County. East Garden City Substation is an existing 345 kV gas insulated switchgear (“GIS”) substation. The existing 345 kV Y-49 Line, an underground transmission line originating at the Consolidated Edison (“Con Edison”) 345 kV Sprain Brook Substation, terminates at the East Garden City Substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Existing EGC 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	0	LS	140,319.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.23	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.41	Precast Arch. Wall foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.42	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.43	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 404,484	\$ 462,267	\$ 288,917	\$ 1,155,667
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 193,347	\$ 102,423	\$ 56,236	\$ 352,006
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	9	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	1	EA		292,900.00	191,600.00	\$ -	\$ 292,900	\$ 191,600	\$ 484,500
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	1	EA	1,130,443.86	678,266.31	452,177.54	\$ 1,130,444	\$ 678,266	\$ 452,178	\$ 2,260,888
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	120	LF	550.00	275.00	82.50				\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	3	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,759,960	\$ 974,686	\$ 644,658	\$ 5,379,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	24,900	LF	5.30	1.43	0.29	\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,900	LF	11.15	10.80	5.40	\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH		-					\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	427,571.55	299,300.08	128,271.46	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.13	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
5 - Existing EGC 345 kV_ Upgrade							\$ 4,618,496	\$ 1,697,415	\$ 1,043,066	\$ 7,358,978
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		56,351.33	24,150.57	\$ -	\$ 56,351	\$ 24,151	\$ 80,502
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		73,589.78		\$ -	\$ 73,590	\$ -	\$ 73,590
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		294,359.13		\$ -	\$ 294,359	\$ -	\$ 294,359
9.4	Utility PM and Project Oversight	1.0	LS		73,589.78		\$ -	\$ 73,590	\$ -	\$ 73,590
9.5	Site Accommodation, Facilities, Storage	1.0	LS	73,589.78			\$ 73,590	\$ -	\$ -	\$ 73,590
	Engineering									
9.6	Design Engineering	1.00	LS		407,847.24		\$ -	\$ 407,847	\$ -	\$ 407,847
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		35,686.63		\$ -	\$ 35,687	\$ -	\$ 35,687
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		191,178.39		\$ -	\$ 191,178	\$ -	\$ 191,178
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		50,980.90		\$ -	\$ 50,981	\$ -	\$ 50,981
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,294.27		\$ -	\$ 15,294	\$ -	\$ 15,294
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			10,156,468.00	\$ -	\$ -	\$ 10,156,468	\$ 10,156,468
9.17	Legal Fees (Real estate)	1.00	LS		-	304,694.04	\$ -	\$ -	\$ 304,694	\$ 304,694
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	4,618,496.23			\$ 406,428	\$ -	\$ -	\$ 406,428
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,358.98		\$ -	\$ 7,359	\$ -	\$ 7,359
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 480,017	\$ 1,226,433	\$ 11,054,413	\$ 12,760,863

Propel NY - TO48 BS2

6 - Existing 345 kV Tremont Substation GIS Interconnection

Total: \$32,771,373

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
6 - Existing 345 kV Tremont Substation_GIS_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$4,238	\$304,182	\$201,269	\$509,689
2. SUBSTATION FOUNDATIONS	\$2,073,430	\$754,091	\$545,707	\$3,373,228
3. SUBSTATION STRUCTURES	\$-	\$-	\$-	\$-
4. MAJOR EQUIPMENT	\$7,833,652	\$4,479,191	\$2,964,461	\$15,277,304
5. LOW VOLTAGE & CONTROL CABLE	\$123,962	\$33,521	\$6,704	\$164,186
6. CONDUIT & CABLE TRENCH	\$140,078	\$58,770	\$24,413	\$223,260
7. GROUND GRID	\$14,781	\$10,494	\$2,365	\$27,640
8. CONTROL ENCLOSURE	\$859,778	\$723,020	\$255,759	\$1,838,557
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$1,040,258	\$1,482,170	\$694,854	\$3,217,283
Turnkey cost (HVDC, GIS)	\$7,313,652	\$4,388,191	\$2,925,461	\$14,627,304
Non-Turnkey cost	\$4,776,525	\$3,457,247	\$1,770,071	\$10,003,843
SUBTOTAL (Costs):	\$12,090,177	\$7,845,439	\$4,695,532	\$24,631,147
CONTRACTOR MARK-UP (OH&P):	\$1,298,594	\$885,596	\$494,140	\$2,678,330
SUBTOTAL:	\$13,388,771	\$8,731,035	\$5,189,672	\$27,309,477
CONTINGENCY ON ENTIRE PROJECT	\$2,677,754	\$1,746,207	\$1,037,934	\$5,461,895
TOTAL:	\$16,066,525	\$10,477,241	\$6,227,606	\$32,771,373

Description of Work: The existing Consolidated Edison Company of New York, Inc. (“Con Edison”) Tremont Substation, located in the Borough of the Bronx, New York City, Bronx County. Tremont Substation is an existing 345 kV AIS substation fed by a single underground 345 kV Line, X-28, which is a Con Edison transmission circuit. The X-28 circuit is connected to a common rigid bus that feeds two (2) 345 kV / 138 kV transformers in parallel. The Solution consists of the termination of a new 345 kV circuit, which requires installing a new 345 kV GIS six-position ring bus within the existing fence-line of the substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing 345 kV Tremont Substation_GIS_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$-	\$-	\$-	\$-
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$-	\$300,000	\$200,000	\$500,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$-	\$-	\$-	\$-
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$-	\$-	\$-	\$-
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$-	\$-	\$-	\$-
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$-	\$-	\$-	\$-
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$-	\$-	\$-	\$-
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$-	\$-	\$-	\$-
1.9	Blasting		EA				\$-	\$-	\$-	\$-
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$-	\$-	\$-	\$-
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$-	\$-	\$-	\$-
1.12	7" Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$-	\$-	\$-	\$-
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$-	\$-	\$-	\$-
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$-	\$-	\$-	\$-
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	446,976.00	-	-	\$-	\$-	\$-	\$-
1.16	Seeding	0	SF	1.50	1.50	1.00	\$-	\$-	\$-	\$-
1.17	Erosion Control-Silt fence install & remove	825	LF	2.41	3.16	0.72	\$1,988	\$2,607	\$594	\$5,189
1.18	Temporary fencing	300	LF	7.50	5.25	2.25	\$2,250	\$1,575	\$675	\$4,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.8	345kV, GIS to air bushing	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.9	345kV, GIS support-1 Ph	45	CY	703.89	804.44	502.78	\$ 31,436	\$ 35,926	\$ 22,454	\$ 89,816
2.10	345kV, GIS support-3 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.11	345kV, GIS Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	125	CY	703.89	804.44	502.78	\$ 87,986	\$ 100,555	\$ 62,847	\$ 251,388
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	93	EA	18,000.00	3,200.00	2,800.00	\$ 1,674,000	\$ 297,600	\$ 260,400	\$ 2,232,000
2.33	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	12	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	9	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	11	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16				\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.4	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.5	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.6	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,218,942.00	731,365.20	487,576.80	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
4.13	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.15	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.16	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	23,400	LF	5.30	1.43	0.29	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,452	LF	2.09	3.42	1.46	\$ 3,036	\$ 4,959	\$ 2,125	\$ 10,120
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	171,028.62	119,720.03	51,308.59	\$ 171,029	\$ 119,720	\$ 51,309	\$ 342,057
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
6 - Existing 345 kV Tremont Substation_GIS_Interconnection							\$ 11,049,919	\$ 6,363,269	\$ 4,000,677	\$ 21,413,864
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		106,760.29	45,754.41	\$ -	\$ 106,760	\$ 45,754	\$ 152,515
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		271,462.42		\$ -	\$ 271,462	\$ -	\$ 271,462
9.4	Utility PM and Project Oversite	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.5	Site Accommodation, Facilities, Storage	1.0	LS	67,865.60			\$ 67,866	\$ -	\$ -	\$ 67,866
	Engineering									
9.6	Design Engineering	1.00	LS		542,924.84		\$ -	\$ 542,925	\$ -	\$ 542,925
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		47,505.92		\$ -	\$ 47,506	\$ -	\$ 47,506
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		254,496.02		\$ -	\$ 254,496	\$ -	\$ 254,496
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		20,359.68		\$ -	\$ 20,360	\$ -	\$ 20,360
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			83,963.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	2,518.89	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 640,000	\$ -	\$ -	\$ 640,000	\$ 640,000
9.20	Sales Tax on Materials	8.80%	LS	11,049,918.55			\$ 972,393	\$ -	\$ -	\$ 972,393
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		21,413.86		\$ -	\$ 21,414	\$ -	\$ 21,414
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283

Propel NY - TO48 BS2

7 - Existing Sprain Brook 345 kV Interconnection

Total: \$ 18,929,529

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
7 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 220,337	\$ 164,274	\$ 94,817	\$ 479,428
2. SUBSTATION FOUNDATIONS	\$ 1,177,446	\$ 706,038	\$ 455,635	\$ 2,339,119
3. SUBSTATION STRUCTURES	\$ 238,253	\$ 334,356	\$ 217,809	\$ 790,418
4. MAJOR EQUIPTMENT	\$ 4,510,308	\$ 702,685	\$ 333,505	\$ 5,546,498
5. LOW VOLTAGE & CONTROL CABLE	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH	\$ 96,730	\$ 42,420	\$ 17,895	\$ 157,045
7. GROUND GRID	\$ 8,890	\$ 6,320	\$ 1,423	\$ 16,634
8. CONTROL ENCLOSURE	\$ 339,088	\$ 271,271	\$ 67,818	\$ 678,177
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 688,453	\$ 2,142,338	\$ 420,746	\$ 3,251,537
SUBTOTAL (Costs):	\$ 7,362,145	\$ 4,392,048	\$ 1,614,118	\$ 13,368,311
CONTRACTOR MARK-UP (OH&P)	\$ 1,325,186	\$ 790,569	\$ 290,541	\$ 2,406,296
SUBTOTAL:	\$ 8,687,332	\$ 5,182,616	\$ 1,904,659	\$ 15,774,607
CONTINGENCY ON ENTIRE PROJECT	\$ 1,737,466	\$ 1,036,523	\$ 380,932	\$ 3,154,921
TOTAL:	\$ 10,424,798	\$ 6,219,140	\$ 2,285,591	\$ 18,929,529

Description of Work: Interconnection Facilities to the existing Con Edison Sprain Brook Substation, located in the City of Yonkers, Westchester County. Sprain Brook Substation is an existing 345 kV AIS substation with a BAAH configuration. The Solution includes installing a new underground 345 kV line with a shunt reactor in new bay positions.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - Existing Sprain Brook 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.4	ACRE	-	10,800.00	7,200.00	\$ -	\$ 4,320	\$ 2,880	\$ 7,200
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	481	SY	4.85	7.20	4.80	\$ 2,333	\$ 3,464	\$ 2,309	\$ 8,107
1.4	Strip and Dispose Top Soil	645	CY		24.50	10.50	\$ -	\$ 15,811	\$ 6,776	\$ 22,587
1.5	Site Grading- Excavation for Substation Pad	1,936	CY		9.00	6.00	\$ -	\$ 17,424	\$ 11,616	\$ 29,040
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,045	CY		21.00	9.00	\$ -	\$ 21,954.24	\$ 9,408.96	\$ 31,363.20
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,568	CY		2.40	1.60	\$ -	\$ 3,764	\$ 2,509	\$ 6,273
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,045	CY	25.00	2.40	1.60	\$ 26,136	\$ 2,509	\$ 1,673	\$ 30,318
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	1,936	SY	11.00	6.00	4.00	\$ 21,296	\$ 11,616	\$ 7,744	\$ 40,656
1.11	Site Surfacing - Aggregate 6" Thick	1,936	SY	16.50	4.50	3.00	\$ 31,944	\$ 8,712	\$ 5,808	\$ 46,464
1.12	7' Station Fence w/ Barbed Wire & Grounding	450	LF	13.85	13.85	6.92	\$ 6,232	\$ 6,232	\$ 3,116	\$ 15,579
1.13	40' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines	1	LS	89,529.60	38,400.00	18,120.00	\$ 89,530	\$ 38,400	\$ 18,120	\$ 146,050
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	146	LF	156.00	117.00	117.00	\$ 22,776	\$ 17,082	\$ 17,082	\$ 56,940
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 220,337	\$ 164,274	\$ 94,817	\$ 479,428

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	66	CY	703.89	804.44	502.78	\$ 46,710	\$ 53,383	\$ 33,364	\$ 133,457
2.5	345kV, Bus support-1 Ph	16	CY	703.89	804.44	502.78	\$ 11,150	\$ 12,742	\$ 7,964	\$ 31,856
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	127	CY	703.89	804.44	502.78	\$ 89,196	\$ 101,939	\$ 63,712	\$ 254,847
2.15	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, IPO circuit breaker	93	CY	703.89	804.44	502.78	\$ 65,696	\$ 75,081	\$ 46,926	\$ 187,703
2.22	345kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.34	Precast Concrete Piles-12"X80'	24	EA	18,000.00	3,200.00	2,800.00	\$ 432,000	\$ 76,800	\$ 67,200	\$ 576,000
2.35	Precast Concrete Piles-18"X40'	12	EA	12,000.00	2,200.00	1,800.00	\$ 144,000	\$ 26,400	\$ 21,600	\$ 192,000
2.36	Local Control Cabinet foundation	1	CY	703.89	804.44	502.78	\$ 521	\$ 596	\$ 372	\$ 1,490
2.37	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - 345KV FOUNDATION							\$ 1,177,446	\$ 706,038	\$ 455,635	\$ 2,339,119
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.5	345kV, Bus support-1 Ph	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	4	EA	19,240.00	11,544.00	7,696.00	\$ 76,960	\$ 46,176	\$ 30,784	\$ 153,920
3.15	345kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80	1,019	LF	25.00	184.94	123.29	\$ 25,475	\$ 188,452	\$ 125,635	\$ 339,561
3.25	AL. Bus fittings	1	LS	30,570.00	30,570.00	15,285.00	\$ 30,570	\$ 30,570	\$ 15,285	\$ 76,425
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 238,253	\$ 334,356	\$ 217,809	\$ 790,418

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	4	EA	57,720.00	34,632.00	23,088.00	\$ 230,880	\$ 138,528	\$ 92,352	\$ 461,760
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	1	EA		323,400.00	138,600.00	\$ -	\$ 323,400	\$ 138,600	\$ 462,000
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	1	EA	980,000.00	57,239.00	24,531.00	\$ 980,000	\$ 57,239	\$ 24,531	\$ 1,061,770
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.18	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	\$ 50,700	\$ 32,760	\$ 14,040	\$ 97,500
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil	0	LF	5.30	1.61	0.40	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 4,510,308	\$ 702,685	\$ 333,505	\$ 5,546,498
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,700	LF	11.15	10.80	5.40	\$ 30,105	\$ 29,160	\$ 14,580	\$ 73,845
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 96,730	\$ 42,420	\$ 17,895	\$ 157,045
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	880	LF	2.09	3.42	1.46	\$ 1,840	\$ 3,005	\$ 1,288	\$ 6,134
7.2	Caweld, DSA, 4/0 , T, CROSS	28	EA	165.00	75.00		\$ 4,620	\$ 2,100	\$ -	\$ 6,720
7.3	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,430	\$ 1,215	\$ 135	\$ 3,780
TOTAL - GROUND GRID							\$ 8,890	\$ 6,320	\$ 1,423	\$ 16,634
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	1	EA	41,575.50	33,260.40	8,315.10	\$ 41,576	\$ 33,260	\$ 8,315	\$ 83,151
8.3	Backup Line Relays (87L): GE L90	1	EA	41,575.50	33,260.40	8,315.10	\$ 41,576	\$ 33,260	\$ 8,315	\$ 83,151
8.4	Primary Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							\$ 339,088	\$ 271,271	\$ 67,818	\$ 678,177
7 - Existing Sprain Brook 345 kV_ Interconnection							\$ 6,673,693	\$ 2,249,710	\$ 1,193,372	\$ 10,116,775
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		120,507.86	51,646.23	\$ -	\$ 120,508	\$ 51,646	\$ 172,154
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		101,167.75		\$ -	\$ 101,168	\$ -	\$ 101,168
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		404,670.98		\$ -	\$ 404,671	\$ -	\$ 404,671
9.4	Utility PM and Project Oversight	1.0	LS		101,167.75		\$ -	\$ 101,168	\$ -	\$ 101,168
9.5	Site Accommodation, Facilities, Storage	1.0	LS	101,167.75			\$ 101,168	\$ -	\$ -	\$ 101,168
	Engineering									
9.6	Design Engineering	1.00	LS		809,341.97		\$ -	\$ 809,342	\$ -	\$ 809,342
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		70,817.42		\$ -	\$ 70,817	\$ -	\$ 70,817
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		379,379.05		\$ -	\$ 379,379	\$ -	\$ 379,379
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		101,167.75		\$ -	\$ 101,168	\$ -	\$ 101,168
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		30,350.32		\$ -	\$ 30,350	\$ -	\$ 30,350
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			822,958.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	24,688.74	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 360,000	\$ -	\$ -	\$ 360,000	\$ 360,000
9.20	Sales Tax on Materials	8.80%	LS	6,673,692.74			\$ 587,285	\$ -	\$ -	\$ 587,285
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		10,116.77		\$ -	\$ 10,117	\$ -	\$ 10,117
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 688,453	\$ 2,142,338	\$ 420,746	\$ 3,251,537

Propel NY - TO48 BS2

8 - Existing Ruland 138 kV Upgrade & Interconnection

Total: \$ 13,614,467

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
8 - Existing Ruland 138 kV_ Upgrade & Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 251,469	\$ 278,373	\$ 156,657	\$ 686,499
2. SUBSTATION FOUNDATIONS	\$ 965,636	\$ 756,155	\$ 488,597	\$ 2,210,388
3. SUBSTATION STRUCTURES	\$ 272,182	\$ 191,597	\$ 178,582	\$ 642,361
4. MAJOR EQUIPTMENT	\$ 2,060,025	\$ 328,518	\$ 138,222	\$ 2,526,765
5. LOW VOLTAGE & CONTROL CABLE	\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
6. CONDUIT & CABLE TRENCH	\$ 324,073	\$ 225,017	\$ 106,737	\$ 655,827
7. GROUND GRID	\$ 28,699	\$ 20,592	\$ 4,732	\$ 54,023
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 442,925	\$ 1,566,399	\$ 313,588	\$ 2,322,912
SUBTOTAL (Costs):	\$ 4,647,541	\$ 3,538,822	\$ 1,428,374	\$ 9,614,737
CONTRACTOR MARK-UP (OH&P)	\$ 836,557	\$ 636,988	\$ 257,107	\$ 1,730,653
SUBTOTAL:	\$ 5,484,099	\$ 4,175,810	\$ 1,685,481	\$ 11,345,389
CONTINGENCY ON ENTIRE PROJECT	\$ 1,096,820	\$ 835,162	\$ 337,096	\$ 2,269,078
TOTAL:	\$ 6,580,918	\$ 5,010,972	\$ 2,022,577	\$ 13,614,467

Description of Work: Upgrades and Potential Interconnection Facilities to the existing LIPA Ruland Road Substation, located in the Hamlet of Melville, Town of Huntington, Suffolk County. Ruland Road Substation is an existing 138 kV AIS substation configured with six (6) BAAH bays. The Solution includes installing three (3) air core reactors in series to the 138 kV Lines 138-561,138-562, and 138-567, respectively, which are proposed as Upgrades and two (2) 138 kV circuit breakers which are proposed as Potential Interconnection Facilities.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.2	ACRE	-	10,800.00	7,200.00	\$ -	\$ 12,960	\$ 8,640	\$ 21,600
1.2	Demolition	1	LS	-	4,800.00	3,200.00	\$ -	\$ 4,800	\$ 3,200	\$ 8,000
1.3	New Access Road - 20'	978	SY	4.85	7.20	4.80	\$ 4,742	\$ 7,040	\$ 4,693	\$ 16,476
1.4	Strip and Dispose Top Soil	1,936	CY		24.50	10.50	\$ -	\$ 47,432	\$ 20,328	\$ 67,760
1.5	Site Grading- Excavation for Substation Pad	5,808	CY		9.00	6.00	\$ -	\$ 52,272	\$ 34,848	\$ 87,120
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	3,136	CY		21.00	9.00	\$ -	\$ 65,862.72	\$ 28,226.88	\$ 94,089.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	4,704	CY		2.40	1.60	\$ -	\$ 11,291	\$ 7,527	\$ 18,818
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	3,136	CY	25.00	2.40	1.60	\$ 78,408	\$ 7,527	\$ 5,018	\$ 90,953
1.9	Blasting		EA	-			\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	5,808	SY	11.00	6.00	4.00	\$ 63,888	\$ 34,848	\$ 23,232	\$ 121,968
1.11	Site Surfacing - Aggregate 6" Thick	5,808	SY	16.50	4.50	3.00	\$ 95,832	\$ 26,136	\$ 17,424	\$ 139,392
1.12	7' Station Fence w/ Barbed Wire & Grounding	340	LF	13.85	13.85	6.92	\$ 4,708	\$ 4,708	\$ 2,354	\$ 11,771
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 251,469	\$ 278,373	\$ 156,657	\$ 686,499
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	218	CY	703.89	804.44	502.78	\$ 153,560	\$ 175,497	\$ 109,685	\$ 438,742
2.27	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.28	138kV, CCVT	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, Air core reactors (3 Ph)	249	CY	703.89	804.44	502.78	\$ 175,204	\$ 200,233	\$ 125,146	\$ 500,583
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	20	EA	18,000.00	3,200.00	2,800.00	\$ 360,000	\$ 64,000	\$ 56,000	\$ 480,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 965,636	\$ 756,155	\$ 488,597	\$ 2,210,388
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	9	EA	5,694.00	3,928.86	2,619.24	\$ 51,246	\$ 35,360	\$ 23,573	\$ 110,179
3.18	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.19	138kV, CCVT	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, Surge arrester	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	6	EA	21,450.00	12,870.00	17,160.00	\$ 128,700	\$ 77,220	\$ 102,960	\$ 308,880
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.25	AL. Bus Tubing, 5" SCH 80	126	LF	25.00	184.94	123.29	\$ 3,150	\$ 23,302	\$ 15,535	\$ 41,987
3.26	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	\$ 3,780	\$ 3,780	\$ 1,890	\$ 9,450
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 272,182	\$ 191,597	\$ 178,582	\$ 642,361
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kv	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Disconnect Switch	9	EA	37,700.00	11,875.50	5,089.50	\$ 339,300	\$ 106,880	\$ 45,806	\$ 491,985
4.22	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.23	138kV, CCVT	6	EA	10,000.00	7,970.08	3,415.75	\$ 60,000	\$ 47,821	\$ 20,495	\$ 128,315
4.24	138kV, Air core reactors (3 Ph)	9	EA	46,833.00	6,500.00	2,500.00	\$ 421,497	\$ 58,500	\$ 22,500	\$ 502,497
4.25	138kV, Surge arrester	18	EA	4,446.00	4,200.00	1,800.00	\$ 80,028	\$ 75,600	\$ 32,400	\$ 188,028
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 2,060,025	\$ 328,518	\$ 138,222	\$ 2,526,765
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	24,900	LF	5.30	1.43	0.29	\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,250	LF	11.15	10.80	5.40	\$ 58,538	\$ 56,700	\$ 28,350	\$ 143,588
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.8	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.9	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.10	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.11	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
6.12		0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 324,073	\$ 225,017	\$ 106,737	\$ 655,827
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,900	LF	2.09	3.42	1.46	\$ 6,064	\$ 9,904	\$ 4,245	\$ 20,213
7.2	Caweld, DSA, 4/0 , T, CROSS	84	EA	165.00	75.00		\$ 13,860	\$ 6,300	\$ -	\$ 20,160
7.3	Ground Rod, 3/4" x 15'	65	EA	135.00	67.50	7.50	\$ 8,775	\$ 4,388	\$ 488	\$ 13,650
TOTAL - GROUND GRID							\$ 28,699	\$ 20,592	\$ 4,732	\$ 54,023
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8 - Existing Ruland 138 kV_ Upgrade & Interconnection							\$ 4,204,617	\$ 1,972,423	\$ 1,114,785	\$ 7,291,825
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		108,052.28	46,308.12	\$ -	\$ 108,052	\$ 46,308	\$ 154,360
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		291,672.99		\$ -	\$ 291,673	\$ -	\$ 291,673
9.4	Utility PM and Project Oversight	1.0	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.5	Site Accommodation, Facilities, Storage	1.0	LS	72,918.25			\$ 72,918	\$ -	\$ -	\$ 72,918
	Engineering									
9.6	Design Engineering	1.00	LS		583,345.98		\$ -	\$ 583,346	\$ -	\$ 583,346
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		51,042.77		\$ -	\$ 51,043	\$ -	\$ 51,043
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		273,443.43		\$ -	\$ 273,443	\$ -	\$ 273,443
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		21,875.47		\$ -	\$ 21,875	\$ -	\$ 21,875
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			76,578.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	2,297.34	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	4,204,616.61			\$ 370,006	\$ -	\$ -	\$ 370,006
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,291.82		\$ -	\$ 7,292	\$ -	\$ 7,292
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 442,925	\$ 1,566,399	\$ 313,588	\$ 2,322,912

Propel NY - TO48 BS2

9 -Existing Shore Road 138 kV Interconnection

Total: \$ 17,527,679

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
9 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 763,029	\$ 594,091	\$ 384,107	\$ 1,741,226.59
3. SUBSTATION STRUCTURES	\$ 438,491	\$ 427,288	\$ 268,027	\$ 1,133,805.97
4. MAJOR EQUIPTMENT	\$ 3,977,637	\$ 403,988	\$ 221,795	\$ 4,603,419.50
5. LOW VOLTAGE & CONTROL CABLE	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655.40
6. CONDUIT & CABLE TRENCH	\$ 259,121	\$ 213,377	\$ 104,232	\$ 576,729.60
7. GROUND GRID	\$ 66,810	\$ 48,271	\$ 11,248	\$ 126,329.05
8. CONTROL ENCLOSURE	\$ 428,594	\$ 420,875	\$ 137,719	\$ 987,187.22
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 628,654	\$ 1,990,780	\$ 396,517	\$ 3,015,951.21
SUBTOTAL (Costs):	\$ 6,708,547	\$ 4,138,207	\$ 1,531,551	\$ 12,378,305
CONTRACTOR MARK-UP (OH&P)	\$ 1,207,538	\$ 744,877	\$ 275,679	\$ 2,228,095
SUBTOTAL:	\$ 7,916,085	\$ 4,883,084	\$ 1,807,231	\$ 14,606,399
CONTINGENCY ON ENTIRE PROJECT	\$ 1,583,217	\$ 976,617	\$ 361,446	\$ 2,921,279.87
TOTAL:	\$ 9,499,302	\$ 5,859,700	\$ 2,168,677	\$ 17,527,679

Description of Work: Interconnection Facilities to the existing LIPA Shore Road Substation, located in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. Shore Road Substation is an existing 138 kV AIS substation with a main-tie main configuration. The Solution includes installing two (2) additional circuit breakers to create a six (6) position ring bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 -Existing Shore Road 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Shunt Reactor with oil containment-50MVAR	95	CY	703.89	804.44	502.78	\$ 66,869	\$ 76,422	\$ 47,764	\$ 191,055
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	18	CY	703.89	804.44	502.78	\$ 12,514	\$ 14,301	\$ 8,938	\$ 35,753
2.26	138kV, Bus support-3 Ph, low	118	CY	703.89	804.44	502.78	\$ 82,847	\$ 94,683	\$ 59,177	\$ 236,706
2.27	138kV, Bus support-1 Ph, low	85	CY	703.89	804.44	502.78	\$ 60,013	\$ 68,587	\$ 42,867	\$ 171,466
2.28	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.29	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.30	138kV, CCVT	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.31	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.33	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.34	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.37	Precast Concrete Piles-12"X80'	16	EA	18,000.00	3,200.00	2,800.00	\$ 288,000	\$ 51,200	\$ 44,800	\$ 384,000
2.38	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39										
2.40										
TOTAL - 345KV FOUNDATION							\$ 763,029	\$ 594,091	\$ 384,107	\$ 1,741,227
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	11	EA	4,173.00	2,879.76	1,919.84	\$ 45,903	\$ 31,677	\$ 21,118	\$ 98,699
3.16	138kV, Bus support-1 Ph, low	21	EA	2,782.00	1,919.84	1,279.89	\$ 58,422	\$ 40,317	\$ 26,878	\$ 125,616
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	9	EA	3,206.67	1,924.00	1,282.67	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	3	EA	33,000.00	19,800.00	13,200.00	\$ 99,000	\$ 59,400	\$ 39,600	\$ 198,000
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	957	LF	25.00	184.94	123.29	\$ 23,925	\$ 176,986	\$ 117,990	\$ 318,901
3.24	AL. Bus fittings	1	LS	28,710.00	28,710.00	14,355.00	\$ 28,710	\$ 28,710	\$ 14,355	\$ 71,775
3.25	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 438,491	\$ 427,288	\$ 268,027	\$ 1,133,806
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-50MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Shunt Reactor with oil containment-50MVAR	1	EA	1,710,761.00	3,520.00	880.00	\$ 1,710,761	\$ 3,520	\$ 880	\$ 1,715,161
4.20	Transport & Testing- Shunt Reactor, 138kV	1	EA		222,400.00	144,600.00	\$ -	\$ 222,400	\$ 144,600	\$ 367,000
4.21	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker (PASS)	4	EA	510,000.00	13,559.00	5,811.00	\$ 2,040,000	\$ 54,236	\$ 23,244	\$ 2,117,480
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300
4.26	138kV, CCVT	9	EA	10,000.00	7,970.08	3,415.75	\$ 90,000	\$ 71,731	\$ 30,742	\$ 192,473
4.27	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.28	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.29	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.31	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,977,637	\$ 403,988	\$ 221,795	\$ 4,603,420
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	27,600	LF	5.30	1.43	0.29	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,400	LF	11.15	10.80	5.40	\$ 60,210	\$ 58,320	\$ 29,160	\$ 147,690
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.8	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.9	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.10	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.11	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
TOTAL - CONDUIT & CABLE TRENCH							\$ 259,121	\$ 213,377	\$ 104,232	\$ 576,730
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,865	LF	2.09	3.42	1.46	\$ 14,355	\$ 23,446	\$ 10,048	\$ 47,849
7.2	Caweld, DSA, 4/0 , T, CROSS	187	EA	165.00	75.00		\$ 30,855	\$ 14,025	\$ -	\$ 44,880
7.3	Ground Rod, 3/4" x 15'	160	EA	135.00	67.50	7.50	\$ 21,600	\$ 10,800	\$ 1,200	\$ 33,600
TOTAL - GROUND GRID		-					\$ 66,810	\$ 48,271	\$ 11,248	\$ 126,329
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.8	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 428,594	\$ 420,875	\$ 137,719	\$ 987,187
9 -Existing Shore Road 138 kV_ Interconnection							\$ 6,079,892	\$ 2,147,426	\$ 1,135,035	\$ 9,362,353
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		114,886.13	49,236.91	\$ -	\$ 114,886	\$ 49,237	\$ 164,123
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		374,494.13		\$ -	\$ 374,494	\$ -	\$ 374,494
9.4	Utility PM and Project Oversight	1.0	LS		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.5	Site Accommodation, Facilities, Storage	1.0	LS	93,623.53			\$ 93,624	\$ -	\$ -	\$ 93,624
	Engineering									
9.6	Design Engineering	1.00	LS		748,988.27		\$ -	\$ 748,988	\$ -	\$ 748,988
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		65,536.47		\$ -	\$ 65,536	\$ -	\$ 65,536
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		351,088.25		\$ -	\$ 351,088	\$ -	\$ 351,088
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		28,087.06		\$ -	\$ 28,087	\$ -	\$ 28,087
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	215,711.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	6,471.33	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 340,000	\$ -	\$ -	\$ 340,000	\$ 340,000
9.20	Sales Tax on Materials	8.80%	LS	6,079,892.49			\$ 535,031	\$ -	\$ -	\$ 535,031
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,362.35		\$ -	\$ 9,362	\$ -	\$ 9,362
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 628,654	\$ 1,990,780	\$ 396,517	\$ 3,015,951

Propel NY - TO48 BS2

10 -Existing Syosset 138 kV Interconnection

Total: \$ 23,262,106

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
10 -Existing Syosset 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657.14
3. SUBSTATION STRUCTURES	\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134.09
4. MAJOR EQUIPTMENT	\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,445.50
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,728.70
6. CONDUIT & CABLE TRENCH	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230.00
7. GROUND GRID	\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880.24
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,624.92
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,085,537	\$ 2,514,098	\$ 508,705	\$ 4,108,340.32
SUBTOTAL (Costs):	\$ 12,021,218	\$ 3,388,517	\$ 1,018,305	\$ 16,428,041
CONTRACTOR MARK-UP (OH&P)	\$ 2,163,819	\$ 609,933	\$ 183,295	\$ 2,957,047
SUBTOTAL:	\$ 14,185,037	\$ 3,998,451	\$ 1,201,600	\$ 19,385,088
CONTINGENCY ON ENTIRE PROJECT	\$ 2,837,007	\$ 799,690	\$ 240,320	\$ 3,877,017.66
TOTAL:	\$ 17,022,045	\$ 4,798,141	\$ 1,441,920	\$ 23,262,106

Description of Work: Interconnection Facilities to the existing LIPA Syosset Substation, located in the Hamlet of Syosset, Town of Oyster Bay, Nassau County. Syosset Substation is a 138 kV AIS substation with an eight (8) ring bus configuration. The Solution includes the installation of a new underground 138 kV line with a PAR in an existing spare line position.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10 -Existing Syosset 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.20	138kV, Surge arrester	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL Bus Tubing, 5" SCH 80	81	LF	25.00	184.94	123.29	\$ 2,025	\$ 14,980	\$ 9,987	\$ 26,992
3.26	AL Bus fittings	1	LS	2,430.00	2,430.00	1,215.00	\$ 2,430	\$ 2,430	\$ 1,215	\$ 6,075
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,087,382.00	3,520.00	880.00	\$ 10,087,382	\$ 3,520	\$ 880	\$ 10,091,782
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kv	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.23	138kV, CCVT	3	EA	10,000.00	7,970.08	3,415.75	\$ 30,000	\$ 23,910	\$ 10,247	\$ 64,158
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	792	LF	2.09	3.42	1.46	\$ 1,656	\$ 2,705	\$ 1,159	\$ 5,520
7.2	Caweld, DSA, 4/0 , T, CROSS	41	EA	165.00	75.00		\$ 6,765	\$ 3,075	\$ -	\$ 9,840
7.3	Ground Rod, 3/4" x 15'	12	EA	135.00	67.50	7.50	\$ 1,620	\$ 810	\$ 90	\$ 2,520
TOTAL - GROUND GRID		-					\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10 -Existing Syosset 138 kV_ Interconnection							\$ 10,935,681	\$ 874,419	\$ 509,600	\$ 12,319,701
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		48,440.68	20,760.29	\$ -	\$ 48,441	\$ 20,760	\$ 69,201
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		123,197.01		\$ -	\$ 123,197	\$ -	\$ 123,197
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		492,788.02		\$ -	\$ 492,788	\$ -	\$ 492,788
9.4	Utility PM and Project Oversight	1.0	LS		123,197.01		\$ -	\$ 123,197	\$ -	\$ 123,197
9.5	Site Accommodation, Facilities, Storage	1.0	LS	123,197.01			\$ 123,197	\$ -	\$ -	\$ 123,197
	Engineering									
9.6	Design Engineering	1.00	LS		985,576.05		\$ -	\$ 985,576	\$ -	\$ 985,576
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		86,237.90		\$ -	\$ 86,238	\$ -	\$ 86,238
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		461,988.77		\$ -	\$ 461,989	\$ -	\$ 461,989
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		123,197.01		\$ -	\$ 123,197	\$ -	\$ 123,197
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		36,959.10		\$ -	\$ 36,959	\$ -	\$ 36,959
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			18,296.00	\$ -	\$ -	\$ 18,296	\$ 18,296
9.17	Legal Fees (Real estate)	1.00	LS		-	548.88	\$ -	\$ -	\$ 549	\$ 549
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 460,000	\$ -	\$ -	\$ 460,000	\$ 460,000
9.20	Sales Tax on Materials	8.80%	LS	10,935,681.09			\$ 962,340	\$ -	\$ -	\$ 962,340
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,319.70		\$ -	\$ 12,320	\$ -	\$ 12,320
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,085,537	\$ 2,514,098	\$ 508,705	\$ 4,108,340

Propel NY - TO48 BS2

11 -Existing Holbrook 138 Kv Upgrade

Total: \$ 1,907,161

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
11 -Existing Holbrook 138 Kv Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220
SUBTOTAL (Costs):	\$ 830,227	\$ 415,860	\$ 100,777	\$ 1,346,865
CONTRACTOR MARK-UP (OH&P)	\$ 149,441	\$ 74,855	\$ 18,140	\$ 242,436
SUBTOTAL:	\$ 979,668	\$ 490,715	\$ 118,917	\$ 1,589,301
CONTINGENCY ON ENTIRE PROJECT	\$ 195,934	\$ 98,143	\$ 23,783	\$ 317,860
TOTAL:	\$ 1,175,602	\$ 588,858	\$ 142,701	\$ 1,907,161

Description of Work:The Applicants propose Upgrades to the Holbrook Substation, which is an existing LIPA 138 kV AIS substation, configured as an eight (8) position ring bus. The Holbrook Substation is located in the Hamlet of Holbrook in the Town of Brookhaven in Suffolk County.The 138 kV, 138-882 Line currently feeds two (2) 138 kV/69 kV transformers via an AIS disconnect before connecting into its bus section within the ring bus. The Solution involves replacing the existing switch #1322 with a new hybrid PASS GIS 138 kV breaker system with integrated disconnect and ground switches.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11 -Existing Holbrook 138 Kv Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
11 -Existing Holbrook 138 Kv_ Upgrade							\$ 753,760	\$ 202,826	\$ 57,059	\$ 1,013,645
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,095.98	3,898.28	\$ -	\$ 9,096	\$ 3,898	\$ 12,994
Project Management, Material Handling & Amenities										
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		40,545.79		\$ -	\$ 40,546	\$ -	\$ 40,546
9.4	Utility PM and Project Oversight	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.5	Site Accommodation, Facilities, Storage	1.0	LS	10,136.45			\$ 10,136	\$ -	\$ -	\$ 10,136
Engineering										
9.6	Design Engineering	1.00	LS		81,091.59		\$ -	\$ 81,092	\$ -	\$ 81,092
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		7,095.51		\$ -	\$ 7,096	\$ -	\$ 7,096
Testing & Commissioning										
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		38,011.68		\$ -	\$ 38,012	\$ -	\$ 38,012
Permitting and Additional Costs										
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,040.93		\$ -	\$ 3,041	\$ -	\$ 3,041
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 38,000	\$ -	\$ -	\$ 38,000	\$ 38,000
9.20	Sales Tax on Materials	8.80%	LS	753,759.78			\$ 66,331	\$ -	\$ -	\$ 66,331
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,013.64		\$ -	\$ 1,014	\$ -	\$ 1,014
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220

Propel NY - TO48 BS2

12 -Existing Barrett 138 kV

Total: \$ -

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
12 -Existing Barrett 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ -	\$ -	\$ -	\$ -
SUBTOTAL (Costs):	\$ -	\$ -	\$ -	\$ -
CONTRACTOR MARK-UP (OH&P)	\$ -	\$ -	\$ -	\$ -
SUBTOTAL:	\$ -	\$ -	\$ -	\$ -
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ -
TOTAL:	\$ -	\$ -	\$ -	\$ -

Description of Work:g Upgrades to the existing LIPA Barrett Substation, located in the Hamlet of Oceanside, Town of Hempstead, Nassau County. Barrett Substation is an existing 138 kV AIS substation with a main-tie-main configuration. The Solution includes the addition of a new breaker in series with the existing 138 kV CB-1330 currently feeding a 138 kV/69 kV transformer bank

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 -Existing Barrett 138 Kv										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	15,000.00	10,000.00				
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80				
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50				
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00				
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00				
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60				
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60				
1.9	Blasting		EA							
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00				
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00				
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92				
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00				
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00				
1.15	Storm drain-15" HDPE,	0	LS	-	-	-				
1.16	Seeding	0	SF	1.50	1.50	1.00				
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72				
1.18	Temporary fencing	0	LF	7.50	5.25	2.25				
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50				
1.20	Concrete curb	0	LF	26.00	27.30	11.70				
1.21	Retaining Wall	0	LF	156.00	117.00	117.00				

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78				
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78				
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78				
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78				
2.6	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78				
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78				
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78				
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78				
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78				
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78				
2.12	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78				
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78				
2.14	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78				
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78				
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78				
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78				
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78				
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78				
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78				
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78				
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78				
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78				
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78				
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78				
2.26	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78				
2.27	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78				
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78				
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78				
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78				
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78				
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78				
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78				
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00				
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00				
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78				
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch - 3Ph	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch-3 Ph	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.27	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	0	EA							
4.2	345kV, GIS fast acting GND SW	0	EA							
4.3	345kV, GIS to air bushing	0	EA							
4.4	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end - 3 Ph	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28		\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	0	EA		7,234.50	3,100.50		\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA					\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00		\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA					\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA					\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00		\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA		13,559.00	5,811.00				
4.21	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50		\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75		\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA					\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil	240	LF				\$ -	\$ -	\$ -	\$ -
4.28	Equip jumper connector compression Single 1272 kcmil	24	EA				\$ -	\$ -	\$ -	\$ -
4.29	Substation Equipment connections-Bare Wire ACSR- Lapwing 45/7-1590kcmil		LF				\$ -	\$ -	\$ -	\$ -
4.30	Equip jumper connector compression double 1590 kcmil		EA				\$ -	\$ -	\$ -	\$ -
4.31	Wire Spacer-double		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	300V Copper 12/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.2	300V Copper 12/c TC XHHW/CPE 10AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.3	300V Copper 4/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.4	300V Copper 4/c TC XHHW/CPE 10AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.5	300V Copper 7/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.6	600V Copper 4/c TC XHHW/CPE 8AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.7	Fiber		LF	0.65	-	-	\$ -	\$ -	\$ -	\$ -
5.8							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	5	EA	41,575.50	33,260.40	8,315.10				\$ -
8.3	Backup Line Relays (Pilot): GE L90	5	EA	41,575.50	33,260.40	8,315.10				\$ -
8.4	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62				\$ -
8.5	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62				\$ -
8.6	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62				\$ -
8.7	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62				\$ -
8.8	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.9	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.10	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62				\$ -
8.11	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62				\$ -
8.12	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.13	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.14	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.15	125VDC Battery System	0	LS	5,000.00	22,750.00	9,750.00				\$ -
8.16	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00				\$ -
8.17	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00				\$ -
8.18	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
12 -Existing Barrett 138 Kv							\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		-	-	\$ -	\$ -	\$ -	\$ -
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	-	MO		6,760.00		\$ -	\$ -	\$ -	\$ -
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	4.00	MO		58,933.33		\$ -		\$ -	\$ -
9.4	Utility PM and Project Oversight	-	MO		3,466.67		\$ -	\$ -	\$ -	\$ -
9.5	Site Accommodation, Facilities, Storage	-	MO	-			\$ -	\$ -	\$ -	\$ -
	Engineering									
9.6	Design Engineering	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		-		\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		-		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.13	Environmental Mitigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.15	Real Estate Costs (New)	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.19	Bonds	1	LS		-	\$ -	\$ -	\$ -	\$ -	\$ -
9.20	Sales Tax on Materials	8.80%	LS	-			\$ -	\$ -	\$ -	\$ -
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ -	\$ -	\$ -	\$ -

Propel NY - TO48 BS2

13 - Existing EGC 138 kV Upgrade

Total: \$ 17,743,027

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
13 - Existing EGC 138 kV Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256.31
2. SUBSTATION FOUNDATIONS	\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670.41
3. SUBSTATION STRUCTURES	\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,842.50
4. MAJOR EQUIPMENT	\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093.05
6. CONDUIT & CABLE TRENCH	\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458.40
7. GROUND GRID	\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,059.50
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944.15
SUBTOTAL (Costs):	\$ 4,951,528	\$ 5,301,753	\$ 2,277,106	\$ 12,530,386
CONTRACTOR MARK-UP (OH&P)	\$ 891,275	\$ 954,316	\$ 409,879	\$ 2,255,470
SUBTOTAL:	\$ 5,842,803	\$ 6,256,069	\$ 2,686,985	\$ 14,785,856
CONTINGENCY ON ENTIRE PROJECT	\$ 1,168,561	\$ 1,251,214	\$ 537,397	\$ 2,957,171.17
TOTAL:	\$ 7,011,363	\$ 7,507,282	\$ 3,224,381	\$ 17,743,027

Description of Work: Upgrades to the existing LIPA East Garden City Substation, Hamlet of Uniondale, Town of Hempstead, Nassau County. The LIPA East Garden City Substation is an existing 138 kV AIS substation with a ten (10) position ring bus configuration. The Solution includes the installation of three (3) air core reactors with by-pass circuit, in series, to the 138 kV lines 138-462,138-465, and 138-463, respectively. Due to current site constraints, the new series reactors will be installed in the property adjacent to the existing station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
13 - Existing EGC 138 kV Upgrade											
1. SITE PREP/ GRADING/ FENCING / CIVIL											
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -	The front part of the yard is wooded
1.2	Demolition	1	LS	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000	Fence removal, trailers removal
1.3	New Access Road - 20'	2,051	SY	4.85	7.20	4.80	\$ 9,945	\$ 14,764	\$ 9,843	\$ 34,552	Interior access road- Assumes Type gravel road. Measure dwg- assume 12" stabilized subbased compacted, with geogrid (8" base & 6" rock cover included in substation base & surfacing)
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -	Assume 1' top soil
1.5	Site Grading- Excavation for Substation Pad	6,423	CY		9.00	6.00	\$ -	\$ 57,811	\$ 38,540	\$ 96,351	Assume excavate avg 2', no rock
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	867	CY		21.00	9.00	\$ -	\$ 18,210	\$ 7,804	\$ 26,015	
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,804	CY		2.40	1.60	\$ -	\$ 18,731	\$ 12,487	\$ 31,218	Assume reuse 90% from excavation, truck measure
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	867	CY	25.00	2.40	1.60	\$ 21,679	\$ 2,081	\$ 1,387	\$ 25,148	Assume bring in 10%, truck measure
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -	
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -	Estimate based on 8" base
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -	Estimate based on 6" surface stone. Assume bring in 50% rock, and reuse 50% existing
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,217	LF	13.85	13.85	6.92	\$ 16,853	\$ 16,853	\$ 8,427	\$ 42,133	Perimeter-gates W'. Assume grounding every 100'
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -	Including concrete pad for the doors
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -	Including concrete pad for the doors
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	75,203.20	57,600.00	27,180.00	\$ 75,203	\$ 57,600	\$ 27,180	\$ 159,983	Crew 4- 10 hr/day
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -	Assume sod 3:1 slope, 8' all around
1.17	Erosion Control-Silt fence install & remove	1,826	LF	2.41	3.16	0.72	\$ 4,399	\$ 5,769	\$ 1,314	\$ 11,482	Qty based on site perimeter plus 50% rework
1.18	Temporary fencing	1,217	LF	7.50	5.25	2.25	\$ 9,128	\$ 6,389	\$ 2,738	\$ 18,255	Perimeter
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -	35' wide with asphalt
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -	
1.21	Retaining Wall	408	LF	156.00	117.00	117.00	\$ 63,648	\$ 47,736	\$ 47,736	\$ 159,120	
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256	
2. SUBSTATION FOUNDATIONS											
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818	(1) @ 17.81cu.yds/str
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 36.66cu.yds/str
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(6) @ 36.66cu.yds/str
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 7.92cu.yds/str
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 5.53cu.yds/str
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 7.92cu.yds/str
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 6.6cu.yds/str
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.06cu.yds/str
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.06cu.yds/str
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.06cu.yds/str
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.6cu.yds/str
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.06cu.yds/str
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 6.6cu.yds/str
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 5.35cu.yds/str
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 7.92cu.yds/str

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 328cu.yds/str
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 305cu.yds/str
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 305cu.yds/str
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 126cu.yds/str
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 445cu.yds/str
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 20cu.yds/str
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 20cu.yds/str
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 232cu.yds/str
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 154cu.yds/str
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.45cu.yds/str
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(2) @ 5.35cu.yds/str
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 4.06cu.yds/str
2.28	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247	(4) @ 6.06cu.yds/str
2.29	138kV, Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371	(2) @ 6.06cu.yds/str
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 5.35cu.yds/str
2.29	138kV, Air core reactors (3 Ph)	249	CY	703.89	804.44	502.78	\$ 175,204	\$ 200,233	\$ 125,146	\$ 500,583	(1) @ 82.97cu.yds/str
2.30	138kV, Surge arrester	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669	(1) @ 5.35cu.yds/str
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(4) @ 18.19cu.yds/str
2.32	138kV, H Frame	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983	(2) @ 18.19cu.yds/str
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(5) @ 7.92cu.yds/str
2.34	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -	Assume 30' H
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -	
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -	(1) @ 0.75cu.yds/str
TOTAL - 345KV FOUNDATION							\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670	
3. SUBSTATION STRUCTURES											
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800	
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -	
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -	
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.3	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.3	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.4	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.5	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.6	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.3	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -	
3.3	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -	
3.4	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -	
3.5	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -	
3.6	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -	
3.3	138kV, Disconnect Switch	3	EA	-	-	-	\$ -	\$ -	\$ -	\$ -	
3.3	138kV, Cable sealing end	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580	
3.4	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -	
3.5	138kV, Surge arrester	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160	
3.6	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -	
3.3	138kV, H Frame	6	EA	21,450.00	12,870.00	17,160.00	\$ 128,700	\$ 77,220	\$ 102,960	\$ 308,880	
3.3	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923	
3.4	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500	
3.5	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -	
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843	
4. MAJOR EQUIPMENT											
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -	
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -	
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -	
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -	
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -	
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -	
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -	
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -	
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -	
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -	
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -	
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -	
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -	
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -	
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -	
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -	
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -	
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995	
4.23	138kV, Cable sealing end	27	EA	4,446.00	1,050.00	450.00	\$ 120,042	\$ 28,350	\$ 12,150	\$ 160,542	
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -	
4.25	138kV, Air core reactors (3 Ph)	9	EA	46,833.00	6,500.00	2,500.00	\$ 421,497	\$ 58,500	\$ 22,500	\$ 502,497	
4.26	138kV, Surge arrester	18	EA	4,446.00	4,200.00	1,800.00	\$ 80,028	\$ 75,600	\$ 32,400	\$ 188,028	

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST	Comments:
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -	
4.28	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -	
4.29	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -	
TOTAL - MAJOR EQUIPMENT							\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062	
5. LOW VOLTAGE & CONTROL CABLE											
5.1	Control cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093	
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -	
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093	
6. CONDUIT & CABLE TRENCH											
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -	
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230	
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -	
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -	
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -	
6.6	Cable Trench	850	LF	266.50	53.04	13.26	\$ 226,525	\$ 45,084	\$ 11,271	\$ 282,880	
6.7	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	\$ 299,700	\$ 395,900	\$ 210,900	\$ 906,500	
6.8	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	\$ 1,731,600	\$ 1,043,400	\$ 688,200	\$ 3,463,200	
6.9	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080	
6.10	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	\$ 27,369	\$ 12,323	\$ 8,215	\$ 47,908	
6.11	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	\$ 48,244	\$ 27,850	\$ 18,567	\$ 94,661	
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458	
7. GROUND GRID											
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	9,350	LF	2.09	3.42	1.46	\$ 19,551	\$ 31,933	\$ 13,686	\$ 65,170	
7.2	Caweld, DSA, 4/0 , T, CROSS	252	EA	165.00	75.00		\$ 41,580	\$ 18,900	\$ -	\$ 60,480	
7.3	Ground Rod, 3/4" x 15'	221	EA	135.00	67.50	7.50	\$ 29,835	\$ 14,918	\$ 1,658	\$ 46,410	
TOTAL - GROUND GRID							\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060	
8. CONTROL ENCLOSURE											
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -	
8.2	Primary Bay Control: SEL-451		EA				\$ -	\$ -	\$ -	\$ -	
8.3	Backup Bay Control: SEL-451		EA				\$ -	\$ -	\$ -	\$ -	
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA				\$ -	\$ -	\$ -	\$ -	
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA				\$ -	\$ -	\$ -	\$ -	
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -	
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -	
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -	
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -	
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -	
13 - Existing EGC 138 kV_ Upgrade							\$ 4,463,312	\$ 3,223,882	\$ 1,857,249	\$ 9,544,442	Total Direct Costs
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS											
	Contractor Mobilization / Demobilization										
9.1	Mob / Demob	1.0	LS		177,839.56	76,216.96	\$ -	\$ 177,840	\$ 76,217	\$ 254,057	5% of LA+EQ
	Project Management, Material Handling & Amenities										
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444	Assumes PM, Scheduler/Project Controls and a Cost Estimator will support pre-con stage full time.
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		381,777.69		\$ -	\$ 381,778	\$ -	\$ 381,778	Include all PM Staff, Per Diems, Vehicles and Expenses for construction/close out.
9.4	Utility PM and Project Oversight	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444	
9.5	Site Accommodation, Facilities, Storage	1.0	LS	95,444.42			\$ 95,444	\$ -	\$ -	\$ 95,444	
	Engineering										
9.6	Design Engineering	1.00	LS		763,555.37		\$ -	\$ 763,555	\$ -	\$ 763,555	
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -	
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100	
9.9	Surveying/Staking	1.00	Site		66,811.10		\$ -	\$ 66,811	\$ -	\$ 66,811	
	Testing & Commissioning										
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		357,916.58		\$ -	\$ 357,917	\$ -	\$ 357,917	
	Permitting and Additional Costs										
9.11	Physical Security		LS		6,546.96		\$ -	\$ -	\$ -	\$ -	6P-6A, Sun&Sat all day. Security guard rate avg in NJ \$14.72/HR, used \$18
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444	
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -	
9.14	Warranties / LOC's	1.00	LS		28,633.33		\$ -	\$ 28,633	\$ -	\$ 28,633	
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -	
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -	See Ex EGC 345kv tab
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -	3% of the real estate cost
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP)
9.19	Bonds	1	LS		-	\$ 340,000	\$ -	\$ -	\$ 340,000	\$ 340,000	2% based on contract value
9.20	Sales Tax on Materials	8.80%	LS	4,463,311.81			\$ 392,771	\$ -	\$ -	\$ 392,771	8.8%
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,544.44		\$ -	\$ 9,544	\$ -	\$ 9,544	
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944	

Propel NY - TO53 AS7

14 -Existing Lake Success 138 kV Upgrade

Total: \$ 24,220,111

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
14 -Existing Lake Success 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000.00
2. SUBSTATION FOUNDATIONS	\$ 390,817	\$ 238,191	\$ 158,469	\$ 787,476.80
3. SUBSTATION STRUCTURES	\$ 200,032	\$ 217,657	\$ 129,933	\$ 547,622.51
4. MAJOR EQUIPTMENT	\$ 10,717,905	\$ 378,796	\$ 244,570	\$ 11,341,270.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259.40
6. CONDUIT & CABLE TRENCH	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,512.50
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312.46
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,129,913	\$ 2,613,233	\$ 503,999	\$ 4,247,144.79
SUBTOTAL (Costs):	\$ 12,508,756	\$ 3,525,258	\$ 1,070,584	\$ 17,104,598
CONTRACTOR MARK-UP (OH&P)	\$ 2,251,576	\$ 634,546	\$ 192,705	\$ 3,078,828
SUBTOTAL:	\$ 14,760,333	\$ 4,159,805	\$ 1,263,289	\$ 20,183,426
CONTINGENCY ON ENTIRE PROJECT	\$ 2,952,067	\$ 831,961	\$ 252,658	\$ 4,036,685.24
TOTAL:	\$ 17,712,399	\$ 4,991,765	\$ 1,515,947	\$ 24,220,111

Description of Work: Upgrades to the existing LIPA Lake Success Substation, located in the Hamlet of North New Hyde Park, Town of North Hempstead, Nassau County. Lake Success Substation is an existing 138 kV AIS substation with a main-tie-main configuration. The Solution includes replacing removal of the existing Jamaica 903 Line 138 kV PAR and installation of a new, higher capacity PAR and installing a oil-filled shunt reactor

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 -Existing Lake Success 138 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 390,817	\$ 238,191	\$ 158,469	\$ 787,477
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	12	EA	2,782.00	1,919.84	1,279.89	\$ 33,384	\$ 23,038	\$ 15,359	\$ 71,781
3.17	138kV, Disconnect Switch	1	EA	5,694.00	3,928.86	2,619.24	\$ 5,694	\$ 3,929	\$ 2,619	\$ 12,242
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	625	LF	25.00	184.94	123.29	\$ 15,625	\$ 115,586	\$ 77,058	\$ 208,269
3.26	AL. Bus fittings	1	LS	18,750.00	18,750.00	9,375.00	\$ 18,750	\$ 18,750	\$ 9,375	\$ 46,875
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 200,032	\$ 217,657	\$ 129,933	\$ 547,623

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,680,205.00	3,520.00	880.00	\$ 10,680,205	\$ 3,520	\$ 880	\$ 10,684,605
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kv	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	1	EA	37,700.00	11,875.50	5,089.50	\$ 37,700	\$ 11,876	\$ 5,090	\$ 54,665
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,717,905	\$ 378,796	\$ 244,570	\$ 11,341,270

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,600	LF	5.30	1.43	0.29	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	750	LF	11.15	10.80	5.40	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (87L): GE L90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.9	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
14 -Existing Lake Success 138 kV_ Upgrade							\$ 11,378,844	\$ 912,025	\$ 566,585	\$ 12,857,454
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		51,751.35	22,179.15	\$ -	\$ 51,751	\$ 22,179	\$ 73,930
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		514,298.15		\$ -	\$ 514,298	\$ -	\$ 514,298
9.4	Utility PM and Project Oversight	1.0	LS		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.5	Site Accommodation, Facilities, Storage	1.0	LS	128,574.54			\$ 128,575	\$ -	\$ -	\$ 128,575
	Engineering									
9.6	Design Engineering	1.00	LS		1,028,596.29		\$ -	\$ 1,028,596	\$ -	\$ 1,028,596
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		90,002.18		\$ -	\$ 90,002	\$ -	\$ 90,002
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		482,154.51		\$ -	\$ 482,155	\$ -	\$ 482,155
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		38,572.36		\$ -	\$ 38,572	\$ -	\$ 38,572
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 480,000	\$ -	\$ -	\$ 480,000	\$ 480,000
9.20	Sales Tax on Materials	8.80%	LS	11,378,843.67			\$ 1,001,338	\$ -	\$ -	\$ 1,001,338
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,857.45		\$ -	\$ 12,857	\$ -	\$ 12,857
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,129,913	\$ 2,613,233	\$ 503,999	\$ 4,247,145

Propel NY - TO48 BS2

15 - Existing Rainey 345 kV Upgrade

Total: \$ 5,182,771

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
15 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS	\$ 136,155	\$ 51,378	\$ 36,911	\$ 224,444
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 224,344	\$ 568,027	\$ 111,620	\$ 903,991
SUBTOTAL (Costs):	\$ 2,460,513	\$ 916,266	\$ 283,370	\$ 3,660,149
CONTRACTOR MARK-UP (OH&P)	\$ 442,892	\$ 164,928	\$ 51,007	\$ 658,827
SUBTOTAL:	\$ 2,903,405	\$ 1,081,194	\$ 334,377	\$ 4,318,976
CONTINGENCY ON ENTIRE PROJECT	\$ 580,681	\$ 216,239	\$ 66,875	\$ 863,795.11
TOTAL:	\$ 3,484,086	\$ 1,297,433	\$ 401,252	\$ 5,182,771

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of a new breaker in series with the existing 345 kV CB -1E, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
15 - Existing Rainey 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	90,000.00	60,000.00	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	40,089.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	6	EA	18,000.00	3,200.00	2,800.00	\$ 108,000	\$ 19,200	\$ 16,800	\$ 144,000
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 136,155	\$ 51,378	\$ 36,911	\$ 224,444
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	2	EA	980,000.00	57,239.00	24,531.00	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kv UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kv UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kv Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
15 - Existing Rainey 345 kv_ Upgrade							\$ 2,236,168	\$ 348,239	\$ 171,750	\$ 2,756,158
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		18,199.62	7,799.84	\$ -	\$ 18,200	\$ 7,800	\$ 25,999
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		110,246.30		\$ -	\$ 110,246	\$ -	\$ 110,246
9.4	Utility PM and Project Oversight	1.0	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.5	Site Accommodation, Facilities, Storage	1.0	LS	27,561.58			\$ 27,562	\$ -	\$ -	\$ 27,562
	Engineering									
9.6	Design Engineering	1.00	LS		220,492.61		\$ -	\$ 220,493	\$ -	\$ 220,493
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		19,293.10		\$ -	\$ 19,293	\$ -	\$ 19,293
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		103,355.91		\$ -	\$ 103,356	\$ -	\$ 103,356
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
0	Warranties / LOC's	1.00	LS		8,268.47		\$ -	\$ 8,268	\$ -	\$ 8,268
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 102,000	\$ -	\$ -	\$ 102,000	\$ 102,000
9.20	Sales Tax on Materials	8.80%	LS	2,236,168.36			\$ 196,783	\$ -	\$ -	\$ 196,783
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,756.16		\$ -	\$ 2,756	\$ -	\$ 2,756
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 224,344	\$ 568,027	\$ 111,620	\$ 903,991

Propel NY - TO48 BS2

BS2.1 Barrett to Tremont 345kV Onshore UG Cables -single circuit

Total: \$ 563,380,100

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
BS2.1 Barrett to Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 6,350,848	\$ 31,142,829	\$ 12,500,819	\$ 49,994,496
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 43,763,287	\$ 49,728,024	\$ 36,901,086	\$ 130,392,396
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 68,716,802	\$ 41,446,477	\$ 26,899,532	\$ 137,062,812
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 13,726,684	\$ 50,000,555	\$ 16,690,360	\$ 80,417,599
SUBTOTAL (Costs):	\$ 132,557,621	\$ 172,317,884	\$ 92,991,797	\$ 397,867,302
CONTRACTOR MARK-UP (OH&P)	\$ 23,860,372	\$ 31,017,219	\$ 16,738,523	\$ 71,616,114
SUBTOTAL:	\$ 156,417,993	\$ 203,335,104	\$ 109,730,321	\$ 469,483,417
CONTINGENCY ON ENTIRE PROJECT	\$ 31,283,599	\$ 40,667,021	\$ 21,946,064	\$ 93,896,683
TOTAL:	\$ 187,701,591	\$ 244,002,124	\$ 131,676,385	\$ 563,380,100

Description of Work: 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County. The proposed route will be approximately 25.7 miles, utilizing 4000kcmil XLPE cable for the onshore portions of the route and 5000kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique. Please see the Design Basis Manual, Attachment B.1.1, for more details. Three counties, one city, one town, and three villages will be traversed between the two substations. The proposed route starts in the Hamlet of Oceanside in the Town of Hempstead in Nassau County traveling north through the Villages of Rockville Centre and Lynbrook. The proposed route travels through into the Village of Valley Stream before entering the Borough of Queens, City of New York, Queens County. The proposed route passes a vacant property in the area of 180th Street and Brinkerhoff Avenue, which may allow for future expansion, such as the 6,000MW expansion. In this Solution the Y-51 circuit will be interconnected into the new Eastern Queens Substation. The proposed route will exit Queens County into the Borough of the Bronx, City of New York, Bronx County as it crosses the East River. Once in Bronx County, the proposed route will travel north and west to terminate at Tremont Substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS2.1 Barrett to Tremont 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	25.72	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 18,004,000	\$ 7,716,000	\$ 25,720,000
1.3	Flaggers	780	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,248,000	\$ 3,744,000	\$ 1,248,000	\$ 6,240,000
1.4	K Rail / Lane Control / Metal Plates	135,802	LF	\$ 30	\$ 18	\$ 12	\$ 4,074,048	\$ 2,444,429	\$ 1,629,619	\$ 8,148,096
1.5	Police Support	31,200.0	HR		\$ 120	\$ 27	\$ -	\$ 3,744,000	\$ 842,400	\$ 4,586,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	25.72	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 1,028,800	\$ 3,086,400	\$ 1,028,800	\$ 5,144,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 6,350,848	\$ 31,142,829	\$ 12,500,819	\$ 49,994,496
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	25.72	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 3,595,656	\$ 2,397,104	\$ 5,992,760
2.2	Formwork in Trench	981,845	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,963,690	\$ 1,472,767	\$ 490,922	\$ 3,927,379
2.3	Trench Excavation	84,730	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,482,767	\$ 635,472	\$ 2,118,239
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	5,296	SF	\$ 50	\$ 25	\$ 14	\$ 264,780	\$ 129,742	\$ 74,138	\$ 468,660
2.5	Supply & Install Thermal Backfill	46,774	CY	\$ 350	\$ 245	\$ 105	\$ 16,370,898	\$ 11,459,629	\$ 4,911,270	\$ 32,741,797
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	18,901	CY	\$ 200	\$ 125	\$ 50	\$ 3,780,102	\$ 2,362,564	\$ 945,026	\$ 7,087,692
2.9	Conduit 8" HDPE	407,405	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 8,368,095	\$ 2,309,985	\$ 989,994	\$ 11,668,073

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.10	Conduit 4" HDPE	135,802	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 729,255	\$ 570,367	\$ 244,443	\$ 1,544,064
2.11	Conduit 2" HDPE	135,802	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 259,381	\$ 427,775	\$ 183,332	\$ 870,488
2.12	Warning Tape	135,802	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 20,370	\$ 33,950	\$ 13,580	\$ 67,901
2.13	Trench Box Shoring (Vault)	76	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,374,011	\$ 2,061,017	\$ 3,435,028
2.14	Splice Vault Excavation	24,700	CY		\$ 17.5	\$ 7.5	\$ -	\$ 432,250	\$ 185,250	\$ 617,500
2.15	Splice Vault Supply & Installation	76	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,660,000	\$ 1,254,000	\$ 2,926,000	\$ 6,840,000
2.16	Splice Vault Backfill	7,410	CY		\$ 14.0	\$ 6.0	\$ -	\$ 103,740	\$ 44,460	\$ 148,200
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	10,411	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 8,328,800	\$ 16,657,600	\$ 16,657,600	\$ 41,644,000
2.19	Air Test Ducts	679,008	LF			\$ 0.25	\$ -	\$ -	\$ 169,752	\$ 169,752
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	50,350	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 704,905	\$ 704,905	\$ 352,452	\$ 1,762,261
2.21	PVMT, AGGREGATE, 10", BASE COURSE	13,986	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 313,011	\$ 328,662	\$ 140,855	\$ 782,528
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	189	EA		\$ 400	\$ 1,200	\$ -	\$ 75,602	\$ 226,806	\$ 302,408
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	189	EA		\$ 10	\$ 15	\$ -	\$ 1,890	\$ 2,835	\$ 4,725
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	468	EA		\$ 400	\$ 1,200	\$ -	\$ 187,096	\$ 561,288	\$ 748,384
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,404,312	\$ 936,208	\$ -	\$ 1,404,312	\$ 936,208	\$ 2,340,520
2.26	Excess Materials Disposal to Certified Backfill	132,625	CY		\$ 24.5	\$ 10.5	\$ -	\$ 3,249,323	\$ 1,392,567	\$ 4,641,890
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	76	EA			\$ 4,000	\$ -	\$ -	\$ 304,000	\$ 304,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	109,430	CF		\$ 1.0	\$ 0.5	\$ -	\$ 109,430	\$ 54,715	\$ 164,144
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 43,763,287	\$ 49,728,024	\$ 36,901,086	\$ 130,392,396
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	427,775	FT	\$ 154	\$ 92	\$ 62	\$ 65,877,356	\$ 39,526,414	\$ 26,350,942	\$ 131,754,712
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	228	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,672,616	\$ 1,870,831	\$ 534,523	\$ 5,077,970
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	76	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,014,034	\$ 1,409,824	\$ 604,210	\$ 4,028,068
3.11	Fiber Optic Cable	142,592	FT	\$ 7	\$ 3	\$ 2	\$ 1,054,751	\$ 474,916	\$ 316,611	\$ 1,846,277
3.12	Ground Continuity Conductor	142,592	FT	\$ 13	\$ 8	\$ 5	\$ 1,859,253	\$ 1,073,288	\$ 715,525	\$ 3,648,066
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 68,716,802	\$ 41,446,477	\$ 26,899,532	\$ 137,062,812
BS2.1 Barrett to Tremont 345kV Onshore UG Cables -single circuit							\$ 118,830,937	\$ 122,317,330	\$ 76,301,437	\$ 317,449,703
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,958,563	\$ 3,972,375	\$ -	\$ 5,958,563	\$ 3,972,375	\$ 9,930,938
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,174,497.03		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		12,697,988.14		\$ -	\$ 12,697,988	\$ -	\$ 12,697,988
4.4	Utility PM and Project Oversight	1.0	LS		3,174,497.03		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.5	Site Accommodation, Facilities, Storage	1.0	LS	3,174,497.03			\$ 3,174,497	\$ -	\$ -	\$ 3,174,497
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 15,872,485	\$ -	\$ -	\$ 15,872,485	\$ -	\$ 15,872,485
4.7	LiDAR /GPR	1.0	LS		\$ 571,409	\$ 380,940	\$ -	\$ 571,409	\$ 380,940	\$ 952,349
4.8	Geotech	26.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 70,980	\$ 47,320	\$ 118,300
4.9	Surveying/Staking	1	LS		\$ 1,333,289		\$ -	\$ 1,333,289	\$ -	\$ 1,333,289
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,174,497		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.12	Environmental-special studies/investigation	-	LS		\$ 175,000		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 952,349		\$ -	\$ 952,349	\$ -	\$ 952,349

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.14	Laydown Lease & temporary easement	1	LS		\$ 3,000,000		\$ -	\$ 3,000,000	\$ -	\$ 3,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 687,646	\$ -	\$ -	\$ 687,646	\$ 687,646
4.16	Legal Fees (Real estate)	1.00	LS		-	20,629.38	\$ -	\$ -	\$ 20,629	\$ 20,629
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	4	Crossing			\$ 1,000	\$ -	\$ -	\$ 4,000	\$ 4,000
4.19	Bonds	1	LS			\$ 11,260,000	\$ -	\$ -	\$ 11,260,000	\$ 11,260,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 118,830,936.67			\$ 10,552,187	\$ -	\$ -	\$ 10,552,187
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 317,450	\$ -	\$ -	\$ 317,450	\$ 317,450
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,726,684	\$ 50,000,555	\$ 16,690,360	\$ 80,417,599

Propel NY - TO53 AS7

BS2.2 Syosset to Shore Road 138kV Onshore UG Cables -single circuit

Total: \$ 202,306,242

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
BS2.2 Syosset to Shore Road 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579
SUBTOTAL (Costs):	\$ 48,389,256	\$ 63,543,409	\$ 30,938,976	\$ 142,871,640
CONTRACTOR MARK-UP (OH&P)	\$ 8,710,066	\$ 11,437,814	\$ 5,569,016	\$ 25,716,895
SUBTOTAL:	\$ 57,099,322	\$ 74,981,222	\$ 36,507,991	\$ 168,588,535
CONTINGENCY ON ENTIRE PROJECT	\$ 11,419,864	\$ 14,996,244	\$ 7,301,598	\$ 33,717,707
TOTAL:	\$ 68,519,186	\$ 89,977,467	\$ 43,809,589	\$ 202,306,242

Description of Work: The proposed 138 kV electric underground transmission line begins at the Syosset Substation in the Hamlet of Woodbury in the Town of Oyster Bay in Nassau County leading to the Shore Road Substation in the Hamlet of Glenwood Landing in the Town of Oyster Bay in Nassau County. The proposed route will be approximately 11.3 miles, utilizing 4000 kcmil XLPE cable

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS2.2 Syosset to Shore Road 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,875,000	\$ 3,375,000	\$ 11,250,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	59,400	LF	\$ 30	\$ 18	\$ 12	\$ 1,782,000	\$ 1,069,200	\$ 712,800	\$ 3,564,000
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 450,000	\$ 1,350,000	\$ 450,000	\$ 2,250,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,572,750	\$ 1,048,500	\$ 2,621,250
2.2	Formwork in Trench	467,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 934,512	\$ 700,884	\$ 233,628	\$ 1,869,024
2.3	Trench Excavation	35,996	CY		\$ 17.5	\$ 7.5	\$ -	\$ 629,930	\$ 269,970	\$ 899,900
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,250	SF	\$ 50	\$ 25	\$ 14	\$ 112,488	\$ 55,119	\$ 31,497	\$ 199,103
2.5	Supply & Install Thermal Backfill	20,897	CY	\$ 350	\$ 245	\$ 105	\$ 7,313,854	\$ 5,119,698	\$ 2,194,156	\$ 14,627,709
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,222	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,644,482	\$ 1,027,801	\$ 411,120	\$ 3,083,403
2.9	Conduit 6" HDPE	178,200	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,888,920	\$ 1,010,394	\$ 433,026	\$ 3,332,340
2.10	Conduit 4" HDPE	59,400	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 318,978	\$ 249,480	\$ 106,920	\$ 675,378
2.11	Conduit 2" HDPE	59,400	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 113,454	\$ 187,110	\$ 80,190	\$ 380,754
2.12	Warning Tape	59,400	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,910	\$ 14,850	\$ 5,940	\$ 29,700
2.13	Trench Box Shoring (Vault)	33	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 596,610	\$ 894,915	\$ 1,491,525
2.14	Splice Vault Excavation	5,990	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,827	\$ 44,926	\$ 149,753

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Supply & Installation	33	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,155,000	\$ 544,500	\$ 1,270,500	\$ 2,970,000
2.16	Splice Vault Backfill	1,797	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,158	\$ 10,782	\$ 35,941
2.17	Jack and Bore along Route	168	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 134,400	\$ 268,800	\$ 268,800	\$ 672,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	297,000	LF			\$ 0.25	\$ -	\$ -	\$ 74,250	\$ 74,250
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 299,187	\$ 299,187	\$ 149,594	\$ 747,968
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,936	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 132,853	\$ 139,496	\$ 59,784	\$ 332,133
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	82	EA		\$ 400	\$ 1,200	\$ -	\$ 32,890	\$ 98,669	\$ 131,559
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	82	EA		\$ 10	\$ 15	\$ -	\$ 822	\$ 1,233	\$ 2,056
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	209	EA		\$ 400	\$ 1,200	\$ -	\$ 83,587	\$ 250,761	\$ 334,348
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 614,250	\$ 409,500	\$ -	\$ 614,250	\$ 409,500	\$ 1,023,750
2.26	Excess Materials Disposal to Certified Backfill	52,246	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,280,023	\$ 548,581	\$ 1,828,604
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	33	EA			\$ 4,000	\$ -	\$ -	\$ 132,000	\$ 132,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,986	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,986	\$ 20,993	\$ 62,979
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	187,110	FT	\$ 127	\$ 76	\$ 51	\$ 23,762,970	\$ 14,257,782	\$ 9,505,188	\$ 47,525,940
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	99	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 583,902	\$ 974,802	\$ 278,515	\$ 1,837,218
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	33	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 879,747	\$ 527,848	\$ 351,899	\$ 1,759,494
3.11	Fiber Optic Cable	62,370	FT	\$ 7	\$ 3	\$ 2	\$ 461,351	\$ 207,730	\$ 138,486	\$ 807,567
3.12	Ground Continuity Conductor	62,370	FT	\$ 13	\$ 8	\$ 5	\$ 813,242	\$ 469,459	\$ 312,973	\$ 1,595,674
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
BS2.2 Syosset to Shore Road 138kV Onshore UG Cables -single circuit							\$ 43,400,234	\$ 44,927,052	\$ 25,180,776	\$ 113,508,061
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,103,235	\$ 1,402,157	\$ -	\$ 2,103,235	\$ 1,402,157	\$ 3,505,391
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,540,322.45		\$ -	\$ 4,540,322	\$ -	\$ 4,540,322
4.4	Utility PM and Project Oversight	1.0	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,135,080.61			\$ 1,135,081	\$ -	\$ -	\$ 1,135,081
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,675,403	\$ -	\$ -	\$ 5,675,403	\$ -	\$ 5,675,403
4.7	LiDAR /GPR	1.0	LS		\$ 204,315	\$ 136,210	\$ -	\$ 204,315	\$ 136,210	\$ 340,524
4.8	Geotech	12.0	Location		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 794,556		\$ -	\$ 794,556	\$ -	\$ 794,556
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,135,081		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 340,524		\$ -	\$ 340,524	\$ -	\$ 340,524
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 43,190	\$ -	\$ -	\$ 43,190	\$ 43,190
4.16	Legal Fees (Real estate)	1.00	LS		-	1,295.70	\$ -	\$ -	\$ 1,296	\$ 1,296
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.19	Bonds	1	LS			\$ 4,040,000	\$ -	\$ -	\$ 4,040,000	\$ 4,040,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 43,400,234.15			\$ 3,853,941	\$ -	\$ -	\$ 3,853,941
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 113,508	\$ -	\$ -	\$ 113,508	\$ 113,508
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579

Propel NY - TO48 BS2

BS2.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 359,455,633

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
BS2.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552
SUBTOTAL (Costs):	\$ 91,556,197	\$ 107,706,768	\$ 54,589,882	\$ 253,852,848
CONTRACTOR MARK-UP (OH&P)	\$ 16,480,115	\$ 19,387,218	\$ 9,826,179	\$ 45,693,513
SUBTOTAL:	\$ 108,036,313	\$ 127,093,987	\$ 64,416,061	\$ 299,546,360
CONTINGENCY ON ENTIRE PROJECT	\$ 21,607,263	\$ 25,418,797	\$ 12,883,212	\$ 59,909,272
TOTAL:	\$ 129,643,575	\$ 152,512,784	\$ 77,299,273	\$ 359,455,633

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS2.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	17.83	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 12,481,000	\$ 5,349,000	\$ 17,830,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	94,142	LF	\$ 30	\$ 18	\$ 12	\$ 2,824,272	\$ 1,694,563	\$ 1,129,709	\$ 5,648,544
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	17.83	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 713,200	\$ 2,139,600	\$ 713,200	\$ 3,566,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	17.83	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,492,634	\$ 1,661,756	\$ 4,154,390
2.2	Formwork in Trench	734,083	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,468,166	\$ 1,101,125	\$ 367,042	\$ 2,936,333
2.3	Trench Excavation	63,349	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,108,602	\$ 475,115	\$ 1,583,717
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,959	SF	\$ 50	\$ 25	\$ 14	\$ 197,965	\$ 97,003	\$ 55,430	\$ 350,397
2.5	Supply & Install Thermal Backfill	34,971	CY	\$ 350	\$ 245	\$ 105	\$ 12,239,818	\$ 8,567,872	\$ 3,671,945	\$ 24,479,636
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,131	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,826,220	\$ 1,766,388	\$ 706,555	\$ 5,299,163
2.9	Conduit 8" HDPE	282,427	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,801,055	\$ 1,601,362	\$ 686,298	\$ 8,088,715
2.10	Conduit 4" HDPE	94,142	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 505,545	\$ 395,398	\$ 169,456	\$ 1,070,399
2.11	Conduit 2" HDPE	94,142	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 179,812	\$ 296,549	\$ 127,092	\$ 603,453
2.12	Warning Tape	94,142	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,121	\$ 23,536	\$ 9,414	\$ 47,071

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.13	Trench Box Shoring (Vault)	62	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,120,904	\$ 1,681,356	\$ 2,802,260
2.14	Splice Vault Excavation	20,150	CY		\$ 17.5	\$ 7.5	\$ -	\$ 352,625	\$ 151,125	\$ 503,750
2.15	Splice Vault Supply & Installation	62	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,170,000	\$ 1,023,000	\$ 2,387,000	\$ 5,580,000
2.16	Splice Vault Backfill	6,045	CY		\$ 14.0	\$ 6.0	\$ -	\$ 84,630	\$ 36,270	\$ 120,900
2.17	Jack and Bore along Route	212	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 169,600	\$ 339,200	\$ 339,200	\$ 848,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	470,712	LF			\$ 0.25	\$ -	\$ -	\$ 117,678	\$ 117,678
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	37,981	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 531,739	\$ 531,739	\$ 265,869	\$ 1,329,347
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,550	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 236,117	\$ 247,923	\$ 106,253	\$ 590,293
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	141	EA		\$ 400	\$ 1,200	\$ -	\$ 56,524	\$ 169,573	\$ 226,098
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	141	EA		\$ 10	\$ 15	\$ -	\$ 1,413	\$ 2,120	\$ 3,533
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	350	EA		\$ 400	\$ 1,200	\$ -	\$ 139,884	\$ 419,651	\$ 559,535
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 973,518	\$ 649,012	\$ -	\$ 973,518	\$ 649,012	\$ 1,622,530
2.26	Excess Materials Disposal to Certified Backfill	100,690	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,466,899	\$ 1,057,242	\$ 3,524,142
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	62	EA			\$ 4,000	\$ -	\$ -	\$ 248,000	\$ 248,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	83,499	CF		\$ 1.0	\$ 0.5	\$ -	\$ 83,499	\$ 41,749	\$ 125,248
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	296,549	FT	\$ 154	\$ 92	\$ 62	\$ 45,668,478	\$ 27,401,087	\$ 18,267,391	\$ 91,336,956
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	62	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,643,028	\$ 1,150,120	\$ 492,908	\$ 3,286,056
3.11	Fiber Optic Cable	98,850	FT	\$ 7	\$ 3	\$ 2	\$ 731,190	\$ 329,228	\$ 219,485	\$ 1,279,904
3.12	Ground Continuity Conductor	98,850	FT	\$ 13	\$ 8	\$ 5	\$ 1,288,899	\$ 744,040	\$ 496,027	\$ 2,528,966
TOTAL -ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
BS2.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit							\$ 82,228,347	\$ 76,499,301	\$ 43,869,648	\$ 202,597,296
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,611,068	\$ 2,407,379	\$ -	\$ 3,611,068	\$ 2,407,379	\$ 6,018,447
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		8,103,891.84		\$ -	\$ 8,103,892	\$ -	\$ 8,103,892
4.4	Utility PM and Project Oversight	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,025,972.96			\$ 2,025,973	\$ -	\$ -	\$ 2,025,973
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,129,865	\$ -	\$ -	\$ 10,129,865	\$ -	\$ 10,129,865
4.7	LiDAR /GPR	1.0	LS		\$ 364,675	\$ 243,117	\$ -	\$ 364,675	\$ 243,117	\$ 607,792
4.8	Geotech	18.0	Location		2,730.00	1,820.00	\$ -	\$ 49,140	\$ 32,760	\$ 81,900
4.9	Surveying/Staking	1	LS		\$ 850,909		\$ -	\$ 850,909	\$ -	\$ 850,909
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,025,973		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.12	Environmental-special studies/investigation	-	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 607,792	\$ -	\$ -	\$ 607,792	\$ 607,792
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 45,232	\$ -	\$ -	\$ 45,232	\$ 45,232
4.16	Legal Fees (Real estate)	1.00	LS		-	1,356.96	\$ -	\$ -	\$ 1,357	\$ 1,357
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 7,180,000	\$ -	\$ -	\$ 7,180,000	\$ 7,180,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 82,228,347			\$ 7,301,877	\$ -	\$ -	\$ 7,301,877
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 202,597	\$ -	\$ -	\$ 202,597	\$ 202,597
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552

Propel NY - TO48 BS2

BS2.4a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)

Total: \$ 268,731,745

BS2.4a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
	Material Supply	Labor Supply	Equip Supply	Total
BS2.4a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
1. SUBMARINE CABLE	\$ 45,158,272	\$ 59,271,737	\$ 42,238,005	\$ 146,668,014
2. TRANSITION STATION	\$ 555,750	\$ 593,355	\$ 558,702	\$ 1,707,807
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 5,506,592	\$ 24,417,233	\$ 11,482,660	\$ 41,406,484
SUBTOTAL (Costs):	\$ 51,220,615	\$ 84,282,324	\$ 54,279,367	\$ 189,782,306
CONTRACTOR MARK-UP (OH&P)	\$ 9,219,711	\$ 15,170,818	\$ 9,770,286	\$ 34,160,815
SUBTOTAL:	\$ 60,440,325	\$ 99,453,142	\$ 64,049,653	\$ 223,943,121
CONTINGENCY ON ENTIRE PROJECT	\$ 12,088,065	\$ 19,890,628	\$ 12,809,931	\$ 44,788,624
TOTAL:	\$ 72,528,390	\$ 119,343,771	\$ 76,859,584	\$ 268,731,745

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route. Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS2.4a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA + Vessel Install	100,246	FT	\$ 375	\$ 400	\$ 250	\$ 37,592,280	\$ 40,098,432	\$ 25,061,520	\$ 102,752,232
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 5,073,819	\$ 3,382,546	\$ -	\$ 5,073,819	\$ 3,382,546	\$ 8,456,364
1.3	Submarine Cable Splicing if Required 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.5	Outdoor Termination	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.6	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.7	HDD along Route	4,062	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,499,840	\$ 12,999,680	\$ 12,999,680	\$ 32,499,200
1.8	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 33,891	\$ 22,594	\$ -	\$ 33,891	\$ 22,594	\$ 56,485
1.9	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
1.10	Trench Excavation	1,612	CY		\$ 17.5	\$ 7.5	\$ -	\$ 28,207	\$ 12,089	\$ 40,296
1.11	Supply & Install 6" Sand Bedding for direct bury conduits	101	SF	\$ 50	\$ 25	\$ 14	\$ 5,037	\$ 2,468	\$ 1,410	\$ 8,916
1.12	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
1.13	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
1.14	Native Backfill -direct bury conduits sys Trench	1,491	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,880	\$ 8,949	\$ 29,828
1.15	Conduit 15" HDPE	2,560	LF	\$ 150.0	\$ 45.0	\$ 30.0	\$ 384,000	\$ 115,200	\$ 76,800	\$ 576,000
1.16	Conduit 4" HDPE	1,280	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 6,874	\$ 5,376	\$ 2,304	\$ 14,554
1.17	Conduit 2" HDPE	0	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
1.18	Warning Tape	2,560	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 384	\$ 640	\$ 256	\$ 1,280
TOTAL - MARINE CABLE :							\$ 45,158,272	\$ 59,271,737	\$ 42,238,005	\$ 146,668,014
2. TRANSITION STATION										
2.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,094	\$ 14,063	\$ 35,156
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	1,300	LF	7.50	5.25	2.25	\$ 9,750	\$ 6,825	\$ 2,925	\$ 19,500
2.4	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.5	Splice Vault Excavation	1,593	CY		\$ 17.5	\$ 7.5	\$ -	\$ 27,876	\$ 11,947	\$ 39,822
2.6	Splice Vault Supply & Installation	4	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 280,000	\$ 90,000	\$ 210,000	\$ 580,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.7	Splice Vault Backfill	478	CY		\$ 14.0	\$ 6.0	\$ -	\$ 6,690	\$ 2,867	\$ 9,557
2.8	Air Test Ducts	3,840	LF			\$ 0.25	\$ -	\$ -	\$ 960	\$ 960
2.9	Restoration (incl. Paving)	19,000	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 266,000	\$ 266,000	\$ 133,000	\$ 665,000
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill	1,606	CY		\$ 24.5	\$ 10.5	\$ -	\$ 39,349	\$ 16,864	\$ 56,213
2.15	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	3,205	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,205	\$ 1,602	\$ 4,807
2.20							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 555,750	\$ 593,355	\$ 558,702	\$ 1,707,807
BS2.4a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)							\$ 45,714,022	\$ 59,865,091	\$ 42,796,707	\$ 148,375,821

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		5,935,032.85		\$ -	\$ 5,935,033	\$ -	\$ 5,935,033
3.4	Utility PM and Project Oversight	1.0	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.5	Site Accommodation, Facilities, Storage	1.0	LS	1,483,758.21			\$ 1,483,758	\$ -	\$ -	\$ 1,483,758
	Engineering									
3.6	Design Engineering	1	LS		\$ 7,418,791		\$ -	\$ 7,418,791	\$ -	\$ 7,418,791
3.7	Surveying/Staking	1	LS		\$ 1,038,631		\$ -	\$ 1,038,631	\$ -	\$ 1,038,631
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
3.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,483,758		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
3.12	Warranties / LOC's	1	LS		\$ 445,127		\$ -	\$ 445,127	\$ -	\$ 445,127
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS			\$ 119,087	\$ -	\$ -	\$ 119,087	\$ 119,087
3.15	Legal Fees (Real estate)	1.00	LS		-	3,572.61	\$ -	\$ -	\$ 3,573	\$ 3,573
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Bonds	1	LS			\$ 5,360,000	\$ -	\$ -	\$ 5,360,000	\$ 5,360,000
3.18	Sales Tax on Materials	8.8%	LS	\$ 45,714,022			\$ 4,022,834	\$ -	\$ -	\$ 4,022,834
3.19	Contractor Permits	1	LS		\$ 148,376		\$ -	\$ 148,376	\$ -	\$ 148,376
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,506,592	\$ 24,417,233	\$ 11,482,660	\$ 41,406,484

BS2.4a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)

Total: \$ 57,646,592

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
BS2.4a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 458,544	\$ 2,358,566	\$ 901,978	\$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,609,216	\$ 3,766,387	\$ 2,219,465	\$ 9,595,067
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 9,600,745	\$ 5,671,607	\$ 3,650,873	\$ 18,923,225
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,536,137	\$ 5,351,413	\$ 1,585,940	\$ 8,473,490
SUBTOTAL (Costs):	\$ 15,204,642	\$ 17,147,973	\$ 8,358,255	\$ 40,710,870
CONTRACTOR MARK-UP (OH&P)	\$ 2,736,836	\$ 3,086,635	\$ 1,504,486	\$ 7,327,957
SUBTOTAL:	\$ 17,941,478	\$ 20,234,608	\$ 9,862,741	\$ 48,038,827
CONTINGENCY ON ENTIRE PROJECT	\$ 3,588,296	\$ 4,046,922	\$ 1,972,548	\$ 9,607,765
TOTAL:	\$ 21,529,773	\$ 24,281,530	\$ 11,835,289	\$ 57,646,592

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm² (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route. Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS2.4a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.66	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,162,000	\$ 498,000	\$ 1,660,000
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	8,765	LF	\$ 30	\$ 18	\$ 12	\$ 262,944	\$ 157,766	\$ 105,178	\$ 525,888
1.5	Police Support	3,600.0	HR		\$ 120	\$ 27	\$ -	\$ 432,000	\$ 97,200	\$ 529,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	1.66	Mile	\$ 60,000	\$ 180,000	\$ 60,000	\$ 99,600	\$ 298,800	\$ 99,600	\$ 498,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 458,544	\$ 2,358,566	\$ 901,978	\$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y57 & Y58 -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.2	Formwork in Trench	70,118	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 140,237	\$ 105,178	\$ 35,059	\$ 280,474
2.3	Trench Excavation	5,189	CY		\$ 17.5	\$ 7.5	\$ -	\$ 90,803	\$ 38,916	\$ 129,719
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	540	CY	\$ 50	\$ 25	\$ 14	\$ 27,025	\$ 13,242	\$ 7,567	\$ 47,834
2.5	Supply & Install Thermal Backfill -conduit level	4,769	CY	\$ 350	\$ 245	\$ 105	\$ 1,668,988	\$ 1,168,292	\$ 500,697	\$ 3,337,977
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,667	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 333,355	\$ 208,347	\$ 83,339	\$ 625,040
2.8	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.9	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.10	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.11	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.12	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.13	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500
2.14	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.15	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,477	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 62,676	\$ 62,676	\$ 31,338	\$ 156,689
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,244	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,831	\$ 29,223	\$ 12,524	\$ 69,578
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,667	\$ 20,001	\$ 26,668
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	17	EA		\$ 10	\$ 15	\$ -	\$ 167	\$ 250	\$ 417
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	48	EA		\$ 400	\$ 1,200	\$ -	\$ 19,074	\$ 57,222	\$ 76,297
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.24	Excess Materials Disposal to Certified Backfill	7,455	CY		\$ 24.5	\$ 10.5	\$ -	\$ 182,652	\$ 78,279	\$ 260,932
2.25	Rock Excavation and Removal	3,979	CY		\$ 243	\$ 162	\$ -	\$ 966,939	\$ 644,626	\$ 1,611,566
2.26	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	5,969	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,969	\$ 2,984	\$ 8,953
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,609,216	\$ 3,766,387	\$ 2,219,465	\$ 9,595,067

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.7	Y57 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.8	Y57 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.9	Y57 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y57 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y57 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y57 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.1	Y58 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.2	Y58 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.3	Y58 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y58 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y58 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y58 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	4	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 106,002	\$ 74,201	\$ 31,801	\$ 212,004
3.11	Fiber Optic Cable	18,406	FT	\$ 7	\$ 3	\$ 2	\$ 136,150	\$ 61,303	\$ 40,869	\$ 238,322
3.12	Ground Continuity Conductor	18,406	FT	\$ 13	\$ 8	\$ 5	\$ 239,997	\$ 138,543	\$ 92,362	\$ 470,901
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 9,600,745	\$ 5,671,607	\$ 3,650,873	\$ 18,923,225
BS2.4a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)							\$ 13,668,505	\$ 11,796,560	\$ 6,772,316	\$ 32,237,380
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 557,066	\$ 371,378	\$ -	\$ 557,066	\$ 371,378	\$ 928,444
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		1,289,495.22		\$ -	\$ 1,289,495	\$ -	\$ 1,289,495
4.4	Utility PM and Project Oversight	1.0	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.5	Site Accommodation, Facilities, Storage	1.0	LS	322,373.80			\$ 322,374	\$ -	\$ -	\$ 322,374
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,611,869	\$ -	\$ -	\$ 1,611,869	\$ -	\$ 1,611,869
4.7	LiDAR /GPR	1.0	LS		\$ 58,027	\$ 38,685	\$ -	\$ 58,027	\$ 38,685	\$ 96,712
4.8	Geotech	2.0	Location		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 225,662		\$ -	\$ 225,662	\$ -	\$ 225,662
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 322,374		\$ -	\$ 322,374	\$ -	\$ 322,374
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 96,712		\$ -	\$ 96,712	\$ -	\$ 96,712
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,140,000	\$ -	\$ -	\$ 1,140,000	\$ 1,140,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 13,668,504.91			\$ 1,213,763	\$ -	\$ -	\$ 1,213,763
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 32,237	\$ -	\$ -	\$ 32,237	\$ 32,237
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,536,137	\$ 5,351,413	\$ 1,585,940	\$ 8,473,490

Propel NY - TO48 BS2

BS2.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit

Total: \$ 192,457,231

Propel NY - TO48 BS2				
	Material Supply	Labor Supply	Equip Supply	Total
BS2.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,062,976	\$ 10,216,426	\$ 4,057,750	\$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 13,413,863	\$ 17,463,031	\$ 12,869,325	\$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 24,404,937	\$ 14,775,402	\$ 9,279,739	\$ 48,460,079
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,626,936	\$ 17,106,525	\$ 5,639,213	\$ 27,372,674
SUBTOTAL (Costs):	\$ 44,508,712	\$ 59,561,384	\$ 31,846,028	\$ 135,916,124
CONTRACTOR MARK-UP (OH&P)	\$ 8,011,568	\$ 10,721,049	\$ 5,732,285	\$ 24,464,902
SUBTOTAL:	\$ 52,520,280	\$ 70,282,433	\$ 37,578,313	\$ 160,381,026
CONTINGENCY ON ENTIRE PROJECT	\$ 10,504,056	\$ 14,056,487	\$ 7,515,663	\$ 32,076,205
TOTAL:	\$ 63,024,336	\$ 84,338,920	\$ 45,093,976	\$ 192,457,231

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route. New Rochelle Station To Sprainbrook segment is 8.14 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS2.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.14	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,698,000	\$ 2,442,000	\$ 8,140,000
1.3	Flaggers	280	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 448,000	\$ 1,344,000	\$ 448,000	\$ 2,240,000
1.4	K Rail / Lane Control / Metal Plates	42,979	LF	\$ 30	\$ 18	\$ 12	\$ 1,289,376	\$ 773,626	\$ 515,750	\$ 2,578,752
1.5	Police Support	11,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,344,000	\$ 302,400	\$ 1,646,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.14	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 325,600	\$ 976,800	\$ 325,600	\$ 1,628,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,062,976	\$ 10,216,426	\$ 4,057,750	\$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.14	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,137,972	\$ 758,648	\$ 1,896,620
2.2	Formwork in Trench	318,202	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 636,403	\$ 477,302	\$ 159,101	\$ 1,272,806
2.3	Trench Excavation	16,476	CY		\$ 17.5	\$ 7.5	\$ -	\$ 288,326	\$ 123,568	\$ 411,894
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,716	SF	\$ 50	\$ 25	\$ 14	\$ 85,811	\$ 42,048	\$ 24,027	\$ 151,886
2.5	Supply & Install Thermal Backfill	15,159	CY	\$ 350	\$ 245	\$ 105	\$ 5,305,570	\$ 3,713,899	\$ 1,591,671	\$ 10,611,139
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,125	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,225,076	\$ 765,673	\$ 306,269	\$ 2,297,018
2.9	Conduit 8" HDPE	128,938	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 2,648,378	\$ 731,076	\$ 313,318	\$ 3,692,773
2.10	Conduit 4" HDPE	42,979	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 230,798	\$ 180,513	\$ 77,363	\$ 488,674
2.11	Conduit 2" HDPE	42,979	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 82,090	\$ 135,384	\$ 58,022	\$ 275,497
2.12	Warning Tape	42,979	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,447	\$ 10,745	\$ 4,298	\$ 21,490
2.13	Trench Box Shoring (Vault)	40	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 723,164	\$ 1,084,746	\$ 1,807,910

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.14	Splice Vault Excavation	7,800	CY		\$ 17.5	\$ 7.5	\$ -	\$ 136,500	\$ 58,500	\$ 195,000
2.15	Splice Vault Supply & Installation	40	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,400,000	\$ 660,000	\$ 1,540,000	\$ 3,600,000
2.16	Splice Vault Backfill	2,340	CY		\$ 14.0	\$ 6.0	\$ -	\$ 32,760	\$ 14,040	\$ 46,800
2.17	Jack and Bore along Route	310	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 248,000	\$ 496,000	\$ 496,000	\$ 1,240,000
2.18	HDD along Route	1,494	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,195,200	\$ 2,390,400	\$ 2,390,400	\$ 5,976,000
2.19	Air Test Ducts	214,896	LF			\$ 0.25	\$ -	\$ -	\$ 53,724	\$ 53,724
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,317	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 242,436	\$ 242,436	\$ 121,218	\$ 606,089
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,810	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 107,653	\$ 113,036	\$ 48,444	\$ 269,132
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	61	EA		\$ 400	\$ 1,200	\$ -	\$ 24,502	\$ 73,505	\$ 98,006
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	61	EA		\$ 10	\$ 15	\$ -	\$ 613	\$ 919	\$ 1,531
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,635	\$ 181,905	\$ 242,540
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 444,444	\$ 296,296	\$ -	\$ 444,444	\$ 296,296	\$ 740,740
2.26	Excess Materials Disposal to Certified Backfill	28,517	CY		\$ 24.5	\$ 10.5	\$ -	\$ 698,654	\$ 299,423	\$ 998,078
2.27	Rock Excavation and Removal	16,184	CY		\$ 243	\$ 162	\$ -	\$ 3,932,675	\$ 2,621,783	\$ 6,554,458
2.28	Dewatering	40	EA			\$ 4,000	\$ -	\$ -	\$ 160,000	\$ 160,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	24,276	CF		\$ 1.0	\$ 0.5	\$ -	\$ 24,276	\$ 12,138	\$ 36,414
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,413,863	\$ 17,463,031	\$ 12,869,325	\$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	40	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,060,018	\$ 742,013	\$ 318,005	\$ 2,120,036
3.11	Fiber Optic Cable	45,128	FT	\$ 7	\$ 3	\$ 2	\$ 333,813	\$ 150,304	\$ 100,203	\$ 584,319
3.12	Ground Continuity Conductor	45,128	FT	\$ 13	\$ 8	\$ 5	\$ 588,426	\$ 339,680	\$ 226,453	\$ 1,154,559
TOTAL -ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 24,404,937	\$ 14,775,402	\$ 9,279,739	\$ 48,460,079
BS2.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables -single circuit							\$ 39,881,776	\$ 42,454,859	\$ 26,206,815	\$ 108,543,450
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,059,850	\$ 1,373,233	\$ -	\$ 2,059,850	\$ 1,373,233	\$ 3,433,084
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,341,737.99		\$ -	\$ 4,341,738	\$ -	\$ 4,341,738
4.4	Utility PM and Project Oversight	1.0	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,085,434.50			\$ 1,085,434	\$ -	\$ -	\$ 1,085,434
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,427,172	\$ -	\$ -	\$ 5,427,172	\$ -	\$ 5,427,172
4.7	LiDAR /GPR	1.0	LS		\$ 195,378	\$ 130,252	\$ -	\$ 195,378	\$ 130,252	\$ 325,630
4.8	Geotech	9.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 455,882		\$ -	\$ 455,882	\$ -	\$ 455,882
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,085,434		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 325,630		\$ -	\$ 325,630	\$ -	\$ 325,630
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 164,858	\$ -	\$ -	\$ 164,858	\$ 164,858
4.16	Legal Fees (Real estate)	1.00	LS		-	4,945.74	\$ -	\$ -	\$ 4,946	\$ 4,946

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 3,840,000	\$ -	\$ -	\$ 3,840,000	\$ 3,840,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 39,881,775.62			\$ 3,541,502	\$ -	\$ -	\$ 3,541,502
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 108,543	\$ -	\$ -	\$ 108,543	\$ 108,543
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,626,936	\$ 17,106,525	\$ 5,639,213	\$ 27,372,674

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Other Misc. Upgrades

Total: \$ 15,301,296

Other Misc. Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Misc. Upgrades				
1. Lake Success-Jamaica Cooling Upgrade	\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 437,200	\$ 1,743,800	\$ 425,000	\$ 2,606,000
CONTRACTOR MARK-UP (OH&P)	\$ 798,696	\$ 731,484	\$ 414,900	\$ 1,945,080
SUBTOTAL:	\$ 5,235,896	\$ 4,795,284	\$ 2,719,900	\$ 12,751,080
CONTINGENCY ON ENTIRE PROJECT	\$ 1,047,179	\$ 959,057	\$ 543,980	\$ 2,550,216
TOTAL:	\$ 6,283,075	\$ 5,754,341	\$ 3,263,880	\$ 15,301,296

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Misc. Upgrades										
1. Lake Success-Jamaica Cooling Upgrade										
1.1	Cooling upgrade	1	LS	4,000,000.00	2,320,000.00	1,880,000.00	\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
1.2							\$ -	\$ -	\$ -	\$ -
1.3							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
2.1	138kV Line Upgrade									
							\$ -	\$ -	\$ -	\$ -
TOTAL - :										
3.1	138kV Line Upgrade									
							\$ -	\$ -	\$ -	\$ -
TOTAL - :										
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,000,000.00	\$ 2,320,000.00	\$ 1,880,000.00	\$ 8,200,000.00

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 126,000	\$ 84,000	\$ -	\$ 126,000	\$ 84,000	\$ 210,000
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,000.00		\$ -	\$ 82,000	\$ -	\$ 82,000
4.3	Construction Project Management / Supervision	1	LS		328,000.00		\$ -	\$ 328,000	\$ -	\$ 328,000
4.4	Utility PM and Project Oversight	1	LS		82,000.00		\$ -	\$ 82,000	\$ -	\$ 82,000
4.5	Site Accommodation, Facilities, Storage	1	LS	82,000.00			\$ 82,000	\$ -	\$ -	\$ 82,000
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 410,000	\$ -	\$ -	\$ 410,000	\$ -	\$ 410,000
4.7	LiDAR	1.00	LS		\$ 14,760	\$ 9,840	\$ -	\$ 14,760	\$ 9,840	\$ 24,600
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,440	\$ 22,960	\$ -	\$ 34,440	\$ 22,960	\$ 57,400
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,000		\$ -	\$ 82,000	\$ -	\$ 82,000
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,600		\$ -	\$ 24,600	\$ -	\$ 24,600
4.15	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,000,000.00			\$ 355,200	\$ -	\$ -	\$ 355,200
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,200	\$ -	\$ -	\$ 8,200	\$ 8,200
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 437,200	\$ 1,743,800	\$ 425,000	\$ 2,606,000

Propel NY - TO48 BS2	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO48 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	Shore Road to Sprainbrook 345kv UG line, assume Shore Road to New Rochelle is 2-circuit, New Rochelle to Sprainbrook is 1 -circuit.
36	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 1 circuits, 2 cable per circuit, so there are 2 passes.
37	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
38	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
39	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
40	Substation pad is based on 8" base and 6" surfacing rock.
41	The firewalls for transformers/PAR/Reactors are assumed 30' tall, if required
42	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
43	Costs for precast concrete piles (12"x80') were included in several substations by developer, there are no drawings nor geo technical report to verify if it is required and the quantities. We assumed it is required and included the costs based on developer's quantities.
44	The control panels quantities and values are provided by Sub Station Engineers.

Propel NY - TO49 BS3		
REVISION: 1		
Propel NY - TO49 BS3 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1 - New Rochelle 345kV Substation	\$ 5,189,956
Direct Labor, Material & Equipment Costs	2 - Shore Road 345 kV GIS Substation	\$ 96,036,478
Direct Labor, Material & Equipment Costs	3 - Ruland Road 345/138 kV Substation	\$ 85,231,348
Direct Labor, Material & Equipment Costs	4 - Barrett 345 kV Substation	\$ 92,919,686
Direct Labor, Material & Equipment Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 21,413,864
Direct Labor, Material & Equipment Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	\$ 9,865,160
Direct Labor, Material & Equipment Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 4,984,863
Direct Labor, Material & Equipment Costs	8 -Existing Shore Road 138 kV_ Interconnection	\$ 6,394,174
Direct Labor, Material & Equipment Costs	9 -Existing Holbrook 138 Kv_ Upgrade	\$ 1,013,645
Direct Labor, Material & Equipment Costs	10 -Existing Newbridge 138 Kv_ Upgrade	\$ 2,462,790
Direct Labor, Material & Equipment Costs	11 - Existing EGC 138 kV_ Upgrade	\$ 8,195,943
Direct Labor, Material & Equipment Costs	12 - Existing Rainey 345 kV_ Upgrade	\$ 5,218,315
Direct Labor, Material & Equipment Costs	13 - Existing EGC 345 kV_ Upgrade	\$ 65,328,492
SUBTOTAL (Costs):		\$ 404,254,715
CONTRACTOR MARK-UP (OH&P)		\$ 69,078,298
SUBTOTAL (AFTER MU):		\$ 473,333,013
CONTINGENCY ON ENTIRE PROJECT		\$ 94,666,603
Substation TOTAL:		\$ 567,999,615
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits	\$ 169,375,960
Direct Labor, Material & Equipment Costs	BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 307,723,518
Direct Labor, Material & Equipment Costs	BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit	\$ 7,664,587
Direct Labor, Material & Equipment Costs	BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 118,629,508
Direct Labor, Material & Equipment Costs	BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit	\$ 108,055,566
Direct Labor, Material & Equipment Costs	BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 202,597,296
Direct Labor, Material & Equipment Costs	BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	\$ 148,375,821
Direct Labor, Material & Equipment Costs	BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 32,237,380
Direct Labor, Material & Equipment Costs	BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit	\$ 108,543,450
SUBTOTAL (Costs):		\$ 1,203,203,086
CONTRACTOR MARK-UP (OH&P)		\$ 216,576,556
SUBTOTAL (AFTER MU):		\$ 1,419,779,642
CONTINGENCY ON ENTIRE PROJECT		\$ 283,955,928
Transmission Line TOTAL:		\$ 1,703,735,570
Propel NY - TO49 BS3Total Direct Cost		\$ 2,271,735,186

Propel NY - TO49 BS3 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1 - New Rochelle 345kV Substation	\$ 4,190,336
Indirect Costs	2 - Shore Road 345 kV GIS Substation	\$ 28,048,296
Indirect Costs	3 - Ruland Road 345/138 kV Substation	\$ 28,833,855
Indirect Costs	4 - Barrett 345 kV Substation	\$ 41,387,522
Indirect Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 3,217,283
Indirect Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	\$ 3,181,714
Indirect Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 1,610,496
Indirect Costs	8 -Existing Shore Road 138 kV_ Interconnection	\$ 2,026,220
Indirect Costs	9 -Existing Holbrook 138 Kv_ Upgrade	\$ 333,220
Indirect Costs	10 -Existing Newbridge 138 Kv_ Upgrade	\$ 816,867
Indirect Costs	11 - Existing EGC 138 kV_ Upgrade	\$ 2,572,822
Indirect Costs	12 - Existing Rainey 345 kV_ Upgrade	\$ 1,719,879
Indirect Costs	13 - Existing EGC 345 kV_ Upgrade	\$ 49,771,542
SUBTOTAL (Costs):		\$ 167,710,053
CONTRACTOR MARK-UP (OH&P)		\$ 30,187,810
SUBTOTAL (AFTER MU):		\$ 197,897,863
CONTINGENCY ON ENTIRE PROJECT		\$ 39,579,573
Substation TOTAL:		\$ 237,477,435
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits	\$ 42,876,932
Indirect Costs	BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 78,106,163
Indirect Costs	BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit	\$ 2,465,524
Indirect Costs	BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 30,726,945
Indirect Costs	BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit	\$ 19,691,596
Indirect Costs	BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 51,255,552
Indirect Costs	BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	\$ 41,406,484
Indirect Costs	BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 8,473,490
Indirect Costs	BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit	\$ 27,372,674
SUBTOTAL (Costs):		\$ 302,375,360
CONTRACTOR MARK-UP (OH&P)		\$ 54,427,565
SUBTOTAL (AFTER MU):		\$ 356,802,925
CONTINGENCY ON ENTIRE PROJECT		\$ 71,360,585
Transmission Line TOTAL:		\$ 428,163,510
Propel NY - TO49 BS3 Total Indirect Cost		\$ 665,640,945
Propel NY - TO49 BS3 Total		\$ 2,937,376,131

Propel NY - TO49 BS3

1 - New Rochelle 345kV Substation

Total: \$ 13,282,494

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
1 - New Rochelle 345kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS	\$ 227,559	\$ 260,067	\$ 162,542	\$ 650,169
3. SUBSTATION STRUCTURES	\$ 280,966	\$ 288,799	\$ 189,353	\$ 759,118
4. MAJOR EQUIPMENT	\$ 527,046	\$ 163,391	\$ 70,025	\$ 760,461
5. LOW VOLTAGE & CONTROL CABLE	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH	\$ 198,230	\$ 43,314	\$ 12,044	\$ 253,588
7. GROUND GRID	\$ 56,711	\$ 40,853	\$ 9,473	\$ 107,037
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 270,692	\$ 1,145,032	\$ 2,774,612	\$ 4,190,336
SUBTOTAL (Costs):	\$ 2,756,973	\$ 2,795,584	\$ 3,827,734	\$ 9,380,292
CONTRACTOR MARK-UP (OH&P)	\$ 496,255	\$ 503,205	\$ 688,992	\$ 1,688,453
SUBTOTAL:	\$ 3,253,229	\$ 3,298,789	\$ 4,516,727	\$ 11,068,745
CONTINGENCY ON ENTIRE PROJECT	\$ 650,646	\$ 659,758	\$ 903,345	\$ 2,213,749
TOTAL:	\$ 3,903,874	\$ 3,958,547	\$ 5,420,072	\$ 13,282,494

Description of Work: New, greenfield substation to be called “New Rochelle Substation,” which would be 345 kV and located near 60 Echo Avenue in the City of New Rochelle, Westchester County. The substation would allow for the transition of electric submarine transmission cables to electric underground transmission cables at a location outside of the shoreline of Long Island Sound.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1 - New Rochelle 345kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 19,980	\$ 13,320	\$ 33,300
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,698	SY	4.85	7.20	4.80	\$ 17,933	\$ 26,622	\$ 17,748	\$ 62,304
1.4	Strip and Dispose Top Soil	2,985	CY		24.50	10.50	\$ -	\$ 73,124	\$ 31,339	\$ 104,463
1.5	Site Grading- Excavation for Substation Pad	8,954	CY		9.00	6.00	\$ -	\$ 80,586	\$ 53,724	\$ 134,310
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	4,835	CY		21.00	9.00	\$ -	\$ 101,538.36	\$ 43,516.44	\$ 145,054.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,253	CY		2.40	1.60	\$ -	\$ 17,407	\$ 11,604	\$ 29,011
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,835	CY	25.00	2.40	1.60	\$ 120,879	\$ 11,604	\$ 7,736	\$ 140,220
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,954	SY	11.00	6.00	4.00	\$ 98,494	\$ 53,724	\$ 35,816	\$ 188,034
1.11	Site Surfacing - Aggregate 6" Thick	8,954	SY	16.50	4.50	3.00	\$ 147,741	\$ 40,293	\$ 26,862	\$ 214,896
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,285	LF	13.85	13.85	6.92	\$ 17,795	\$ 17,795	\$ 8,897	\$ 44,487
1.13	24' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	328,812.00	38,400.00	25,368.00	\$ 328,812	\$ 38,400	\$ 25,368	\$ 392,580
1.16	Seeding	25,302	SF	1.50	1.50	1.00	\$ 37,953	\$ 37,953	\$ 25,302	\$ 101,208
1.17	Erosion Control-Silt fence install & remove	2,307	LF	2.41	3.16	0.72	\$ 5,560	\$ 7,290	\$ 1,661	\$ 14,511
1.18	Temporary fencing	1,538	LF	7.50	5.25	2.25	\$ 11,535	\$ 8,075	\$ 3,461	\$ 23,070
1.19	Substation entrance with asphalt	1,085	SY	19.50	26.00	19.50	\$ 21,164	\$ 28,219	\$ 21,164	\$ 70,547
1.20	Guardrail	532	LF	24.00	32.00	24.00	\$ 12,768	\$ 17,024	\$ 12,768	\$ 42,560

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.22	Retaining Wall	1,140	LF	312.00	234.00	234.00	\$ 355,680	\$ 266,760	\$ 266,760	\$ 889,200
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	36	CY	703.89	804.44	502.78	\$ 25,072	\$ 28,654	\$ 17,909	\$ 71,635
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	33	CY	703.89	804.44	502.78	\$ 23,355	\$ 26,691	\$ 16,682	\$ 66,728
2.5	345kV, Bus support-1 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch - (Double Break)	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.30	Precast Concrete Piles-12"X80'	-	EA							
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 227,559	\$ 260,067	\$ 162,542	\$ 650,169
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	2	EA	23,400.00	14,040.00	9,360.00	\$ 46,800	\$ 28,080	\$ 18,720	\$ 93,600
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.5	345kV, Bus support-1 Ph	10	EA	4,810.00	2,886.00	1,924.00	\$ 48,100	\$ 28,860	\$ 19,240	\$ 96,200
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch - (Double Break)	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.14	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	636	LF	25.00	184.94	123.29	\$ 15,900	\$ 117,621	\$ 78,414	\$ 211,934
3.20	AL. Bus fittings	1	LS	19,080.00	19,080.00	9,540.00	\$ 19,080	\$ 19,080	\$ 9,540	\$ 47,700

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 280,966	\$ 288,799	\$ 189,353	\$ 759,118
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch - (Double Break)	3	EA	68,900.00	21,703.50	9,301.50	\$ 206,700	\$ 65,111	\$ 27,905	\$ 299,715
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA		11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		3,150.00	1,350.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.23	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.25	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 527,046	\$ 163,391	\$ 70,025	\$ 760,461
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	1,800	LF	5.30	1.43	0.29	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	450	LF	11.15	10.80	5.40	\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,308
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	725	LF	266.50	53.04	13.26	\$ 193,213	\$ 38,454	\$ 9,614	\$ 241,280
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 198,230	\$ 43,314	\$ 12,044	\$ 253,588
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,780	LF	2.09	3.42	1.46	\$ 12,086	\$ 19,740	\$ 8,460	\$ 40,287
7.2	Caweld, DSA, 4/0 , T, CROSS	160	EA	165.00	75.00		\$ 26,400	\$ 12,000	\$ -	\$ 38,400
7.3	Ground Rod, 3/4" x 15'	135	EA	135.00	67.50	7.50	\$ 18,225	\$ 9,113	\$ 1,013	\$ 28,350
TOTAL - GROUND GRID							\$ 56,711	\$ 40,853	\$ 9,473	\$ 107,037
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (Pilot): GE L90	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.7	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.8	HMI Panel	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
1 - New Rochelle 345kV Substation							\$ 2,486,281	\$ 1,650,552	\$ 1,053,122	\$ 5,189,956
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		94,628.62	40,555.12	\$ -	\$ 94,629	\$ 40,555	\$ 135,184
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		207,598.24		\$ -	\$ 207,598	\$ -	\$ 207,598
9.4	Utility PM and Project Oversight	1.0	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.5	Site Accommodation, Facilities, Storage	1.0	LS	51,899.56			\$ 51,900	\$ -	\$ -	\$ 51,900
	Engineering									
9.6	Design Engineering	1.00	LS		415,196.48		\$ -	\$ 415,196	\$ -	\$ 415,196
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		36,329.69		\$ -	\$ 36,330	\$ -	\$ 36,330
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		194,623.35		\$ -	\$ 194,623	\$ -	\$ 194,623
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,569.87		\$ -	\$ 15,570	\$ -	\$ 15,570
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,393,162.00	\$ -	\$ -	\$ 2,393,162	\$ 2,393,162
9.17	Legal Fees (Real estate)	1.00	LS		-	71,794.86	\$ -	\$ -	\$ 71,795	\$ 71,795
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.8%	LS	2,486,281.16			\$ 218,793	\$ -	\$ -	\$ 218,793
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,189.96		\$ -	\$ 5,190	\$ -	\$ 5,190
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 270,692	\$ 1,145,032	\$ 2,774,612	\$ 4,190,336

Propel NY - TO49 BS3

2 - Shore Road 345 kV GIS Substation

Total: \$ 173,385,312

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
2 - Shore Road 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,369,486	\$ 11,006,431	\$ 6,581,547	\$ 19,957,464
2. SUBSTATION FOUNDATIONS	\$ 4,214,207	\$ 3,943,270	\$ 2,685,696	\$ 10,843,173
3. SUBSTATION STRUCTURES	\$ 203,466	\$ 118,092	\$ 78,728	\$ 400,286
4. MAJOR EQUIPMENT	\$ 46,865,700	\$ 7,975,536	\$ 4,565,107	\$ 59,406,343
5. LOW VOLTAGE & CONTROL CABLE	\$ 187,532	\$ 50,711	\$ 10,142	\$ 248,384
6. CONDUIT & CABLE TRENCH	\$ 1,055,915	\$ 635,839	\$ 322,911	\$ 2,014,665
7. GROUND GRID	\$ 149,160	\$ 107,967	\$ 25,272	\$ 282,399
8. CONTROL ENCLOSURE	\$ 1,382,382	\$ 1,130,634	\$ 370,748	\$ 2,883,764
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,764,992	\$ 17,007,749	\$ 5,275,555	\$ 28,048,296
Turnkey cost (HVDC, GIS)	\$ 8,051,143	\$ 4,830,686	\$ 3,220,457	\$ 16,102,286
Non-Turnkey cost	\$ 54,141,696	\$ 37,145,542	\$ 16,695,250	\$ 107,982,489
SUBTOTAL (Costs):	\$ 62,192,839	\$ 41,976,228	\$ 19,915,707	\$ 124,084,775
CONTRACTOR MARK-UP (OH&P):	\$ 10,228,574	\$ 6,976,039	\$ 3,198,372	\$ 20,402,985
SUBTOTAL:	\$ 72,421,413	\$ 48,952,267	\$ 23,114,080	\$ 144,487,760
CONTINGENCY ON ENTIRE PROJECT	\$ 14,484,283	\$ 9,790,453	\$ 4,622,816	\$ 28,897,552
TOTAL:	\$ 86,905,695	\$ 58,742,720	\$ 27,736,896	\$ 173,385,312

Description of Work: New greenfield 345 kV Shore Road Substation, to be located at 375 Shore Road, in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. The 345 kV Shore Road Substation will serve as the transition station and new connection for the existing LIPA) 138 kV Shore Road Substation. A new 345 kV underground terrestrial transmission line will be converted into two (2) marine transmission lines for crossing Long Island Sound. Also, a 345 kV/138 kV power transformer in series with a 138 kV PAR will connect to the existing LIPA 138 kV substation. Lastly, two (2) 345 kV shunt reactors will be installed for compensation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2 - Shore Road 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 43,200	\$ 28,800	72,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	-
1.3	New Access Road - 20'	3,907	SY	4.85	7.20	4.80	\$ 18,948	\$ 28,130	\$ 18,753	65,831
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$ -	\$ 158,107	\$ 67,760	225,867
1.5	Site Grading- Excavation for Substation Pad	193,600	CY		13.50	9.00	\$ -	\$ 2,613,600	\$ 1,742,400	4,356,000
1.6	Site Grading- Excavation for Substation Pad- Rock	9,680	CY		243.00	162.00	\$ -	\$ 2,352,240	\$ 1,568,160	3,920,400
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	209,088	CY		21.00	9.00	\$ -	\$ 4,390,848.00	\$ 1,881,792.00	6,272,640
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	52,272	CY		2.40	1.60	\$ -	\$ 125,453	\$ 83,635	209,088
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	-
1.10	Blasting		EA				\$ -	\$ -	\$ -	-
1.11	Install substation 8" pad base	19,360	SY	11.00	6.00	4.00	\$ 212,960	\$ 116,160	\$ 77,440	406,560
1.12	Site Surfacing - Aggregate 6" Thick	19,360	SY	16.50	4.50	3.00	\$ 319,440	\$ 87,120	\$ 58,080	464,640
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,701	LF	13.85	13.85	6.92	\$ 23,555	\$ 23,555	\$ 11,778	58,889
1.14	25' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	12,650
1.15	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	3,850
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	488,434.80	76,800.00	76,104.00	\$ 488,435	\$ 76,800	\$ 76,104	641,339
1.17	Seeding	6,320	SF	1.50	1.50	1.00	\$ 9,480	\$ 9,480	\$ 6,320	25,280
1.18	Erosion Control-Silt fence install & remove	2,625	LF	2.41	3.16	0.72	\$ 6,326	\$ 8,295	\$ 1,890	16,511

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Temporary fencing	1,750	LF	7.50	5.25	2.25	\$ 13,125	\$ 9,188	\$ 3,938	26,250
1.20	Substation entrance with asphalt	808	SY	19.50	26.00	19.50	\$ 15,756	\$ 21,008	\$ 15,756	52,520
1.21	Concrete curb	110	LF	26.00	27.30	11.70	\$ 2,860	\$ 3,003	\$ 1,287	7,150
1.22	Retaining Wall	800	LF	1,560.00	1,170.00	1,170.00	\$ 1,248,000	\$ 936,000	\$ 936,000	3,120,000
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,369,486	\$ 11,006,431	\$ 6,581,547	\$ 19,957,464
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	142	CY	703.89	804.44	502.78	\$ 100,290	\$ 114,617	\$ 71,635	\$ 286,542
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.8	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, SSVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.13	345kV, Shunt Reactor with oil containment-150MVAR	635	CY	703.89	804.44	502.78	\$ 446,967	\$ 510,819	\$ 319,262	\$ 1,277,049
2.14	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	353	CY	703.89	804.44	502.78	\$ 248,471	\$ 283,967	\$ 177,480	\$ 709,918
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.19	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.26	138kV, Surge arrester	16	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.27	Firewall Foundation	380	CY	703.89	804.44	502.78	\$ 267,589	\$ 305,816	\$ 191,135	\$ 764,540
2.28	Precast Firewall for transformer, PARs, reactors	5,670	SF	25.00	15.00	10.00	\$ 141,750	\$ 85,050	\$ 56,700	\$ 283,500
2.29	Precast Concrete Piles-12"X80'	198	EA	4,800.00	3,600.00	3,600.00	\$ 950,400	\$ 712,800	\$ 712,800	\$ 2,376,000
2.29	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.30	GIS Concrete Pad	815	CY	703.89	804.44	502.78	\$ 573,666	\$ 655,619	\$ 409,762	\$ 1,639,047
2.31	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	\$ 591,165	\$ 252,972	\$ 108,416	\$ 952,553
TOTAL - 345KV FOUNDATION							\$ 4,214,207	\$ 3,943,270	\$ 2,685,696	\$ 10,843,173
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	8	EA	23,400.00	14,040.00	9,360.00	\$ 187,200	\$ 112,320	\$ 74,880	\$ 374,400
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.5	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-3 Ph	12	EA	4,810.00	2,886.00	1,924.00				\$ -
3.8	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.11	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.13	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA							
3.17	138kV, Cable sealing end	1	EA	4,066.40	1,443.00	962.00	\$ 4,066	\$ 1,443	\$ 962	\$ 6,471
3.20	138kV, Surge arrester	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.18	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 203,466	\$ 118,092	\$ 78,728	\$ 400,286
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.4	345kV, SSVT	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.6	345/138KV, Power Transformer	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.7	Transport & Testing- Transformer	1	EA		834,400.00	357,600.00	\$ -	\$ 834,400	\$ 357,600	\$ 1,192,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.9	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	\$ -	\$ 769,300	\$ 329,700	\$ 1,099,000
4.12	345kV, Phase Angle Regulator	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,341,857.17	805,114.30	536,742.87	\$ 8,051,143	\$ 4,830,686	\$ 3,220,457	\$ 16,102,286
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator	1	EA	11,902,178.00	3,520.00	880.00	\$ 11,902,178	\$ 3,520	\$ 880	\$ 11,906,578
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		701,400.00	300,600.00	\$ -	\$ 701,400	\$ 300,600	\$ 1,002,000
4.19	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300
4.21	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil		LF				\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 46,865,700	\$ 7,975,536	\$ 4,565,107	\$ 59,406,343
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	35,400	LF	5.30	1.43	0.29	\$ 187,532	\$ 50,711	\$ 10,142	\$ 248,384
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 187,532	\$ 50,711	\$ 10,142	\$ 248,384
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,000	LF	11.15	10.80	5.40	\$ 66,900	\$ 64,800	\$ 32,400	\$ 164,100
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,150	LF	266.50	53.04	13.26	\$ 306,475	\$ 60,996	\$ 15,249	\$ 382,720
6.7										
6.10	138kV UG- Conduit	1,100	LF	81.00	107.00	57.00	\$ 89,100	\$ 117,700	\$ 62,700	\$ 269,500
6.11	138kV UG- Cable	3,300	LF	156.00	94.00	62.00	\$ 514,800	\$ 310,200	\$ 204,600	\$ 1,029,600
6.12	138kV UG- Termination	6	EA	9,360.00	11,700.00		\$ 56,160	\$ 70,200	\$ -	\$ 126,360
6.13	Fiber Optic Cable	1,100	LF	7.40	3.33	2.22	\$ 8,137	\$ 3,664	\$ 2,442	\$ 14,243
6.14	Ground Continuity Conductor	1,100	LF	13.04	7.53	5.02	\$ 14,343	\$ 8,280	\$ 5,520	\$ 28,142
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,055,915	\$ 635,839	\$ 322,911	\$ 2,014,665
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,380	LF	2.09	3.42	1.46	\$ 32,160	\$ 52,527	\$ 22,512	\$ 107,199
7.2	Caweld, DSA, 4/0 , T, CROSS	408	EA	165.00	75.00		\$ 67,320	\$ 30,600	\$ -	\$ 97,920
7.3	Ground Rod, 3/4" x 15'	368	EA	135.00	67.50	7.50	\$ 49,680	\$ 24,840	\$ 2,760	\$ 77,280
TOTAL - GROUND GRID							\$ 149,160	\$ 107,967	\$ 25,272	\$ 282,399
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (Pilot): SEL-411L	4	EA	41,575.50	33,260.40	8,315.10	\$ 166,302	\$ 133,042	\$ 33,260	\$ 332,604
8.3	Backup Line Relays (Pilot): GE L90	4	EA	41,575.50	33,260.40	8,315.10	\$ 166,302	\$ 133,042	\$ 33,260	\$ 332,604
8.4	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,382,382	\$ 1,130,634	\$ 370,748	\$ 2,883,764
2 - Shore Road 345 kV GIS Substation							\$ 56,427,847	\$ 24,968,480	\$ 14,640,152	\$ 96,036,478
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,104,512.11	473,362.33	\$ -	\$ 1,104,512	\$ 473,362	\$ 1,577,874
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		799,341.92		\$ -	\$ 799,342	\$ -	\$ 799,342
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,197,367.70		\$ -	\$ 3,197,368	\$ -	\$ 3,197,368
9.4	Utility PM and Project Oversight	1.0	LS		799,341.92		\$ -	\$ 799,342	\$ -	\$ 799,342
9.5	Site Accommodation, Facilities, Storage	1.0	LS	799,341.92			\$ 799,342	\$ -	\$ -	\$ 799,342
	Engineering									
9.6	Design Engineering	1.00	LS		6,394,735.40		\$ -	\$ 6,394,735	\$ -	\$ 6,394,735
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		559,539.35		\$ -	\$ 559,539	\$ -	\$ 559,539
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,997,532.22		\$ -	\$ 2,997,532	\$ -	\$ 2,997,532
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		799,341.92		\$ -	\$ 799,342	\$ -	\$ 799,342
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		239,802.58		\$ -	\$ 239,803	\$ -	\$ 239,803
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,294,265.00	\$ -	\$ -	\$ 1,294,265	\$ 1,294,265
9.17	Legal Fees (Real estate)	1.00	LS		-	38,827.95	\$ -	\$ -	\$ 38,828	\$ 38,828
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,460,000	\$ -	\$ -	\$ 3,460,000	\$ 3,460,000
9.20	Sales Tax on Materials	8.80%	LS	56,427,846.61			\$ 4,965,651	\$ -	\$ -	\$ 4,965,651
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		96,036.48		\$ -	\$ 96,036	\$ -	\$ 96,036
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,764,992	\$ 17,007,749	\$ 5,275,555	\$ 28,048,296

3 - Ruland Road 345/138 kV Substation

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS	\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES	\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960
4. MAJOR EQUIPMENT	\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH	\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID	\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE	\$ 1,323,372	\$ 1,083,426	\$ 358,946	\$ 2,765,743
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,315,869	\$ 17,748,712	\$ 4,769,275	\$ 28,833,855
SUBTOTAL (Costs):	\$ 68,401,729	\$ 32,986,381	\$ 12,677,093	\$ 114,065,203
CONTRACTOR MARK-UP (OH&P)	\$ 12,312,311	\$ 5,937,549	\$ 2,281,877	\$ 20,531,737
SUBTOTAL:	\$ 80,714,040	\$ 38,923,930	\$ 14,958,970	\$ 134,596,939
CONTINGENCY ON ENTIRE PROJECT	\$ 16,142,808	\$ 7,784,786	\$ 2,991,794	\$ 26,919,388
TOTAL:	\$ 96,856,848	\$ 46,708,716	\$ 17,950,764	\$ 161,516,327

[illegible]

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088
2.2	345kV, A Frame 70'	587	CY	703.89	804.44	502.78	\$ 412,871	\$ 471,852	\$ 294,908	\$ 1,179,631
2.3	345kV, Bus support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	293	CY	703.89	804.44	502.78	\$ 206,266	\$ 235,733	\$ 147,333	\$ 589,333
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.11	345kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.12	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	27	CY	703.89	804.44	502.78	\$ 18,770	\$ 21,452	\$ 13,407	\$ 53,629
2.22	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.23	138kV, Bus support-1 Ph, low	110	CY	703.89	804.44	502.78	\$ 77,160	\$ 88,183	\$ 55,114	\$ 220,457
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.26	138kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.27	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.28	Firewall Foundation	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.29	Precast Firewall for transformer, PARs, reactors	1,200	SF	25.00	15.00	10.00	\$ 30,000	\$ 18,000	\$ 12,000	\$ 60,000
2.30	Precast Concrete Piles-12"X80'	212	EA	18,000.00	3,200.00	2,800.00	\$ 3,816,000	\$ 678,400	\$ 593,600	\$ 5,088,000
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - 345KV FOUNDATION							\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'	4	EA	48,100.00	28,860.00	19,240.00	\$ 192,400	\$ 115,440	\$ 76,960	\$ 384,800
3.3	345kV, Bus support-3 Ph	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	37	EA	4,810.00	2,886.00	1,924.00	\$ 177,970	\$ 106,782	\$ 71,188	\$ 355,940
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.11	345kV, CCVT	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.12	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	27	EA	2,782.00	1,919.84	1,279.89	\$ 75,114	\$ 51,836	\$ 34,557	\$ 161,507
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.17	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.18	138kV, A Frame 50'	3	EA	33,000.00	19,800.00	13,200.00	\$ 99,000	\$ 59,400	\$ 39,600	\$ 198,000
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	2,850	LF	25.00	184.94	123.29	\$ 71,250	\$ 527,073	\$ 351,382	\$ 949,706
3.22	AL. Bus fittings	1	LS	85,500.00	85,500.00	42,750.00	\$ 85,500	\$ 85,500	\$ 42,750	\$ 213,750
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.4	345kV, CCVT	18	EA	16,900.00	15,941.99	6,832.28	\$ 304,200	\$ 286,956	\$ 122,981	\$ 714,137
4.5	345kV, Disconnect Switch	2	EA	68,900.00	21,703.50	9,301.50	\$ 137,800	\$ 43,407	\$ 18,603	\$ 199,810
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.7	Transport & Testing- Transformer	3	EA		834,400.00	357,600.00	\$ -	\$ 2,503,200	\$ 1,072,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	2	EA	2,901,774.00	3,520.00	880.00	\$ 5,803,548	\$ 7,040	\$ 1,760	\$ 5,812,348
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	\$ -	\$ 769,300	\$ 329,700	\$ 1,099,000
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	16,086,712.00	3,520.00	880.00	\$ 16,086,712	\$ 3,520	\$ 880	\$ 16,091,112
4.12	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.13	345kV, Circuit Breaker (PASS)	8	EA	980,000.00	57,239.00	24,531.00	\$ 7,840,000	\$ 457,912	\$ 196,248	\$ 8,494,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	\$ 50,700	\$ 32,760	\$ 14,040	\$ 97,500
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker (PASS)	6	EA	510,000.00	13,559.00	5,811.00	\$ 3,060,000	\$ 81,354	\$ 34,866	\$ 3,176,220
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.22	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	\$ 180,000	\$ 143,462	\$ 61,484	\$ 384,945
4.23	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	114,000	LF	5.30	1.43	0.29	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	22,500	LF	11.15	10.80	5.40	\$ 250,875	\$ 243,000	\$ 121,500	\$ 615,375
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	601	LF	266.50	53.04	13.26	\$ 160,167	\$ 31,877	\$ 7,969	\$ 200,013
6.7										
6.8	138kV UG- Conduit	1,775	LF	81.00	107.00	57.00	\$ 143,775	\$ 189,925	\$ 101,175	\$ 434,875
6.9	138kV UG- Cable	6,325	LF	156.00	94.00	62.00	\$ 986,700	\$ 594,550	\$ 392,150	\$ 1,973,400
6.10	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.11	Fiber Optic Cable	1,775	LF	7.40	3.33	2.22	\$ 13,130	\$ 5,912	\$ 3,941	\$ 22,983
6.12	Ground Continuity Conductor	1,775	LF	13.04	7.53	5.02	\$ 23,144	\$ 13,360	\$ 8,907	\$ 45,412
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,334	LF	2.09	3.42	1.46	\$ 61,337	\$ 100,184	\$ 42,936	\$ 204,458
7.2	Caweld, DSA, 4/0 , T, CROSS	780	EA	165.00	75.00		\$ 128,700	\$ 58,500	\$ -	\$ 187,200
7.3	Ground Rod, 3/4" x 15'	722	EA	135.00	67.50	7.50	\$ 97,470	\$ 48,735	\$ 5,415	\$ 151,620
TOTAL - GROUND GRID							\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.5	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,323,372	\$ 1,083,426	\$ 358,946	\$ 2,765,743
3 - Ruland Road 345/138 kV Substation							\$ 62,085,860	\$ 15,237,670	\$ 7,907,818	\$ 85,231,348
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		810,092.08	347,182.32	\$ -	\$ 810,092	\$ 347,182	\$ 1,157,274
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		852,313.48		\$ -	\$ 852,313	\$ -	\$ 852,313
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,409,253.90		\$ -	\$ 3,409,254	\$ -	\$ 3,409,254
9.4	Utility PM and Project Oversight	1.0	LS		852,313.48		\$ -	\$ 852,313	\$ -	\$ 852,313
9.5	Site Accommodation, Facilities, Storage	1.0	LS	852,313.48			\$ 852,313	\$ -	\$ -	\$ 852,313
	Engineering									
9.6	Design Engineering	1.00	LS		6,818,507.80		\$ -	\$ 6,818,508	\$ -	\$ 6,818,508
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		596,619.43		\$ -	\$ 596,619	\$ -	\$ 596,619
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,196,175.53		\$ -	\$ 3,196,176	\$ -	\$ 3,196,176
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		852,313.48		\$ -	\$ 852,313	\$ -	\$ 852,313
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		255,694.04		\$ -	\$ 255,694	\$ -	\$ 255,694
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,220,000	\$ -	\$ -	\$ 3,220,000	\$ 3,220,000
9.20	Sales Tax on Materials	8.80%	LS	62,085,859.60			\$ 5,463,556	\$ -	\$ -	\$ 5,463,556
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		85,231.35		\$ -	\$ 85,231	\$ -	\$ 85,231
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,315,869	\$ 17,748,712	\$ 4,769,275	\$ 28,833,855

Propel NY - TO49 BS3

4 - Barrett 345 kV Substation

Total: \$ 190,179,007

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
4 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,464,301	\$ 1,575,393	\$ 879,099	\$ 3,918,792.73
2. SUBSTATION FOUNDATIONS	\$ 7,327,301	\$ 4,212,108	\$ 2,824,236	\$ 14,363,645.20
3. SUBSTATION STRUCTURES	\$ 1,440,700	\$ 971,270	\$ 581,207	\$ 2,993,176.36
4. MAJOR EQUIPMENT	\$ 58,313,885	\$ 5,439,863	\$ 3,389,976	\$ 67,143,724.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 343,278	\$ 92,826	\$ 18,565	\$ 454,669.20
6. CONDUIT & CABLE TRENCH	\$ 276,975	\$ 145,224	\$ 64,656	\$ 486,855.00
7. GROUND GRID	\$ 211,917	\$ 153,774	\$ 36,139	\$ 401,830.00
8. CONTROL ENCLOSURE	\$ 1,518,997	\$ 1,239,926	\$ 398,071	\$ 3,156,993.22
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,168,164	\$ 24,028,989	\$ 10,190,369	\$ 41,387,522.48
SUBTOTAL (Costs):	\$ 78,065,517	\$ 37,859,373	\$ 18,382,318	\$ 134,307,208
CONTRACTOR MARK-UP (OH&P)	\$ 14,051,793	\$ 6,814,687	\$ 3,308,817	\$ 24,175,297
SUBTOTAL:	\$ 92,117,309	\$ 44,674,061	\$ 21,691,136	\$ 158,482,506
CONTINGENCY ON ENTIRE PROJECT	\$ 18,423,462	\$ 8,934,812	\$ 4,338,227	\$ 31,696,501
TOTAL:	\$ 110,540,771	\$ 53,608,873	\$ 26,029,363	\$ 190,179,007

Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of Hempstead, Nassau County. The New 345 kV Barrett Substation will serve as the main Point of Interconnection (“POI”)between the generation and transmission operator. The New substation will step up the 138 kV POI voltage to 345 kV, and a new 345 kV underground line will be connected

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.7	ACRE	-	10,800.00	7,200.00	\$ -	\$ 72,360	\$ 48,240	\$ 120,600
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,683	SY	4.85	7.20	4.80	\$ 22,713	\$ 33,718	\$ 22,479	\$ 78,910
1.4	Strip and Dispose Top Soil	10,809	CY		24.50	10.50	\$ -	\$ 264,829	\$ 113,498	\$ 378,327
1.5	Site Grading- Excavation for Substation Pad	32,428	CY		9.00	6.00	\$ -	\$ 291,852	\$ 194,568	\$ 486,420
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	17,511	CY		21.00	9.00	\$ -	\$ 367,733.52	\$ 157,600.08	\$ 525,333.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	26,267	CY		2.40	1.60	\$ -	\$ 63,040	\$ 42,027	\$ 105,067
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	17,511	CY	25.00	2.40	1.60	\$ 437,778	\$ 42,027	\$ 28,018	\$ 507,822
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	32,428	SY	11.00	6.00	4.00	\$ 356,708	\$ 194,568	\$ 129,712	\$ 680,988
1.11	Site Surfacing - Aggregate 6" Thick	32,428	SY	16.50	4.50	3.00	\$ 535,062	\$ 145,926	\$ 97,284	\$ 778,272
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,087	LF	13.85	13.85	6.92	\$ 28,901	\$ 28,901	\$ 14,450	\$ 72,252
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH AND INLET	1	EA	20,235.06	19,200.00	6,342.00	\$ 20,235	\$ 19,200	\$ 6,342	\$ 45,777
1.16	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.17	Erosion Control-Silt fence install & remove	3,131	LF	2.41	3.16	0.72	\$ 7,545	\$ 9,892	\$ 2,254	\$ 19,691
1.18	Temporary fencing	2,087	LF	7.50	5.25	2.25	\$ 15,653	\$ 10,957	\$ 4,696	\$ 31,305
1.19	Substation entrance with asphalt	490	SY	19.50	26.00	19.50	\$ 9,555	\$ 12,740	\$ 9,555	\$ 31,850
1.20	Concrete curb	160	LF	26.00	27.30	11.70	\$ 4,160	\$ 4,368	\$ 1,872	\$ 10,400
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,464,301	\$ 1,575,393	\$ 879,099	\$ 3,918,793
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	71	CY	703.89	804.44	502.78	\$ 50,145	\$ 57,308	\$ 35,818	\$ 143,271

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'- ONE BAY	147	CY	703.89	804.44	502.78	\$ 103,218	\$ 117,963	\$ 73,727	\$ 294,908
2.3	345kV, A Frame 70'- TWO BAY	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.4	345kV, Bus support-3 Ph	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.5	345kV, Bus support-1 Ph	293	CY	703.89	804.44	502.78	\$ 206,266	\$ 235,733	\$ 147,333	\$ 589,333
2.6	345kV, Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.7	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, CCVT	80	CY	703.89	804.44	502.78	\$ 56,487	\$ 64,556	\$ 40,348	\$ 161,391
2.9	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.10	345/138KV, Power Transformer with oil containment	825	CY	703.89	804.44	502.78	\$ 580,705	\$ 663,663	\$ 414,789	\$ 1,659,158
2.11	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Shunt Reactor with oil containment-100MVAR	252	CY	703.89	804.44	502.78	\$ 177,379	\$ 202,719	\$ 126,699	\$ 506,797
2.13	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Circuit Breaker (PASS)	140	CY	703.89	804.44	502.78	\$ 98,544	\$ 112,622	\$ 70,389	\$ 281,554
2.15	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.17	138kV, Phase Angle Regulator	441	CY	703.89	804.44	502.78	\$ 310,413	\$ 354,758	\$ 221,724	\$ 886,895
2.18	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.19	138kV, Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.20	138kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.21	Firewall Foundation	816	CY	703.89	804.44	502.78	\$ 574,201	\$ 656,230	\$ 410,144	\$ 1,640,575
2.22	Precast Firewall for transformer	12,270	SF	25.00	15.00	10.00	\$ 306,750	\$ 184,050	\$ 122,700	\$ 613,500
2.23	Precast Concrete Piles-12"X80'	230	EA	18,000.00	3,200.00	2,800.00	\$ 4,140,000	\$ 736,000	\$ 644,000	\$ 5,520,000
TOTAL - 345KV FOUNDATION							\$ 7,327,301	\$ 4,212,108	\$ 2,824,236	\$ 14,363,645
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	4	EA	23,400.00	14,040.00	9,360.00	\$ 93,600	\$ 56,160	\$ 37,440	\$ 187,200
3.2	345kV, A Frame 70'- ONE BAY	1	EA	48,100.00	28,860.00	19,240.00	\$ 48,100	\$ 28,860	\$ 19,240	\$ 96,200
3.3	345kV, A Frame 70'- TWO BAY	2	EA	80,327.00	48,196.20	32,130.80	\$ 160,654	\$ 96,392	\$ 64,262	\$ 321,308
3.4	345kV, Bus support-3 Ph	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.5	345kV, Bus support-1 Ph	37	EA	4,810.00	2,886.00	1,924.00	\$ 177,970	\$ 106,782	\$ 71,188	\$ 355,940
3.6	345kV, Cable sealing end	6	EA	4,066.40	1,443.00	962.00	\$ 24,398	\$ 8,658	\$ 5,772	\$ 38,828
3.7	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, CCVT	15	EA	4,810.00	2,886.00	1,924.00	\$ 72,150	\$ 43,290	\$ 28,860	\$ 144,300
3.9	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.10	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.11	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	\$ 36,754	\$ 11,787	\$ 7,858	\$ 56,398
3.12	138kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.13	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.14	AL. Bus Tubing, 5" SCH 80	1,215	LF	25.00	184.94	123.29	\$ 30,375	\$ 224,700	\$ 149,800	\$ 404,874
3.15	AL. Bus fittings	1	LS	36,450.00	36,450.00	18,225.00	\$ 36,450	\$ 36,450	\$ 18,225	\$ 91,125
3.16	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	\$ 591,165	\$ 252,972	\$ 108,416	\$ 952,553
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,440,700	\$ 971,270	\$ 581,207	\$ 2,993,176
4. MAJOR EQUIPMENT										
4.1	345/138kV, Power Transformer	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.2	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.3	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
	345kV, Shunt Reactor with oil containment-100MVAR	2	EA	\$ 2,385,864	3,520.00	880.00	\$ 4,771,727	\$ 7,040	\$ 1,760	\$ 4,780,527
4.4	Transport & Testing- Shunt Reactor	2	EA		279,400.00	182,600.00	\$ -	\$ 558,800	\$ 365,200	\$ 924,000
4.5	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.6	Transport & Testing- PAR	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV Circuit Breakers, PASS	7	EA	980,000.00	57,239.00	24,531.00	\$ 6,860,000	\$ 400,673	\$ 171,717	\$ 7,432,390
4.9	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.10	345kV, CCVT	15	EA	16,900.00	15,941.99	6,832.28	\$ 253,500	\$ 239,130	\$ 102,484	\$ 595,114
4.11	345kV, Disconnect Switch - 3Ph	2	EA	57,720.00	34,632.00	23,088.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
4.12	345kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.14	Phase Angle Regulating Transformer, 138kV	3	EA	10,713,172.00	3,520.00	880.00	\$ 32,139,516	\$ 10,560	\$ 2,640	\$ 32,152,716
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	3	EA		603,400.00	398,600.00	\$ -	\$ 1,810,200	\$ 1,195,800	\$ 3,006,000
4.16	138kV, Cable sealing end	9	EA	11,600.00	1,050.00	450.00	\$ 104,400	\$ 9,450	\$ 4,050	\$ 117,900
4.17	138kV, Disconnect Switch- 3 Phase	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.18	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.19	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 58,313,885	\$ 5,439,863	\$ 3,389,976	\$ 67,143,724
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	64,800	LF	5.30	1.43	0.29	\$ 343,278	\$ 92,826	\$ 18,565	\$ 454,669
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 343,278	\$ 92,826	\$ 18,565	\$ 454,669
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	10,500	LF	11.15	10.80	5.40	\$ 117,075	\$ 113,400	\$ 56,700	\$ 287,175
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	600	LF	266.50	53.04	13.26	\$ 159,900	\$ 31,824	\$ 7,956	\$ 199,680
6.7							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 276,975	\$ 145,224	\$ 64,656	\$ 486,855
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	22,000	LF	2.09	3.42	1.46	\$ 46,002	\$ 75,137	\$ 32,201	\$ 153,340
7.2	Caweld, DSA, 4/0 , T, CROSS	576	EA	165.00	75.00		\$ 95,040	\$ 43,200	\$ -	\$ 138,240
7.3	Ground Rod, 3/4" x 15'	525	EA	135.00	67.50	7.50	\$ 70,875	\$ 35,438	\$ 3,938	\$ 110,250
TOTAL - GROUND GRID							\$ 211,917	\$ 153,774	\$ 36,139	\$ 401,830
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.3	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.30	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.31	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.32	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.33	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,518,997	\$ 1,239,926	\$ 398,071	\$ 3,156,993
4 - Barrett 345 kV Substation							\$ 70,897,353	\$ 13,830,384	\$ 8,191,949	\$ 92,919,686
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		770,781.66	330,335.00	\$ -	\$ 770,782	\$ 330,335	\$ 1,101,117
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		929,196.86		\$ -	\$ 929,197	\$ -	\$ 929,197
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,716,787.43		\$ -	\$ 3,716,787	\$ -	\$ 3,716,787
9.4	Utility PM and Project Oversight	1.0	LS		929,196.86		\$ -	\$ 929,197	\$ -	\$ 929,197
9.5	Site Accommodation, Facilities, Storage	1.0	LS	929,196.86			\$ 929,197	\$ -	\$ -	\$ 929,197
	Engineering									
9.6	Design Engineering	1.00	LS		7,433,574.86		\$ -	\$ 7,433,575	\$ -	\$ 7,433,575
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		650,437.80		\$ -	\$ 650,438	\$ -	\$ 650,438
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,484,488.21		\$ -	\$ 3,484,488	\$ -	\$ 3,484,488
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		200,000.00		\$ -	\$ 200,000	\$ -	\$ 200,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		929,196.86		\$ -	\$ 929,197	\$ -	\$ 929,197
9.13	Environmental-special studies/investigation	1.00	LS		4,600,000.00		\$ -	\$ 4,600,000	\$ -	\$ 4,600,000
9.14	Warranties / LOC's	1.00	LS		278,759.06		\$ -	\$ 278,759	\$ -	\$ 278,759
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,894,111.00	\$ -	\$ -	\$ 5,894,111	\$ 5,894,111
9.17	Legal Fees (Real estate)	1.00	LS		-	176,823.33	\$ -	\$ -	\$ 176,823	\$ 176,823
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,780,000	\$ -	\$ -	\$ 3,780,000	\$ 3,780,000
9.20	Sales Tax on Materials	8.80%	LS	70,897,352.61			\$ 6,238,967	\$ -	\$ -	\$ 6,238,967
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		92,919.69		\$ -	\$ 92,920	\$ -	\$ 92,920
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,168,164	\$ 24,028,989	\$ 10,190,369	\$ 41,387,522

Propel NY - TO49 BS3

5 - Existing 345 kV Tremont Substation GIS Interconnection

Total: \$ 32,771,373

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Existing 345 kV Tremont Substation_GIS_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS	\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH	\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID	\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE	\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283
Turnkey cost (HVDC, GIS)	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
Non-Turnkey cost	\$ 4,776,525	\$ 3,457,247	\$ 1,770,071	\$ 10,003,843
SUBTOTAL (Costs):	\$ 12,090,177	\$ 7,845,439	\$ 4,695,532	\$ 24,631,147
CONTRACTOR MARK-UP (OH&P):	\$ 1,298,594	\$ 885,596	\$ 494,140	\$ 2,678,330
SUBTOTAL:	\$ 13,388,771	\$ 8,731,035	\$ 5,189,672	\$ 27,309,477
CONTINGENCY ON ENTIRE PROJECT	\$ 2,677,754	\$ 1,746,207	\$ 1,037,934	\$ 5,461,895
TOTAL:	\$ 16,066,525	\$ 10,477,241	\$ 6,227,606	\$ 32,771,373

Description of Work: The existing Consolidated Edison Company of New York, Inc. (“Con Edison”) Tremont Substation, located in the Borough of the Bronx, New York City, Bronx County. Tremont Substation is an existing 345 kV AIS substation fed by a single underground 345 kV Line, X-28, which is a Con Edison transmission circuit. The X-28 circuit is connected to a common rigid bus that feeds two (2) 345 kV / 138 kV transformers in parallel. The Solution consists of the termination of a new 345 kV circuit, which requires installing a new 345 kV GIS six-position ring bus within the existing fence-line of the substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Existing 345 kV Tremont Substation_GIS_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	825	LF	2.41	3.16	0.72	\$ 1,988	\$ 2,607	\$ 594	\$ 5,189
1.18	Temporary fencing	300	LF	7.50	5.25	2.25	\$ 2,250	\$ 1,575	\$ 675	\$ 4,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.8	345kV, GIS to air bushing	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.9	345kV, GIS support-1 Ph	45	CY	703.89	804.44	502.78	\$ 31,436	\$ 35,926	\$ 22,454	\$ 89,816
2.10	345kV, GIS support-3 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.11	345kV, GIS Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	125	CY	703.89	804.44	502.78	\$ 87,986	\$ 100,555	\$ 62,847	\$ 251,388
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	93	EA	18,000.00	3,200.00	2,800.00	\$ 1,674,000	\$ 297,600	\$ 260,400	\$ 2,232,000
2.33	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	12	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	9	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	11	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16				\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.4	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.5	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.6	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,218,942.00	731,365.20	487,576.80	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
4.13	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.15	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.16	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	23,400	LF	5.30	1.43	0.29	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,452	LF	2.09	3.42	1.46	\$ 3,036	\$ 4,959	\$ 2,125	\$ 10,120
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	171,028.62	119,720.03	51,308.59	\$ 171,029	\$ 119,720	\$ 51,309	\$ 342,057
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
5 - Existing 345 kV Tremont Substation_GIS_Interconnection							\$ 11,049,919	\$ 6,363,269	\$ 4,000,677	\$ 21,413,864
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		106,760.29	45,754.41	\$ -	\$ 106,760	\$ 45,754	\$ 152,515
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		271,462.42		\$ -	\$ 271,462	\$ -	\$ 271,462
9.4	Utility PM and Project Oversight	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.5	Site Accommodation, Facilities, Storage	1.0	LS	67,865.60			\$ 67,866	\$ -	\$ -	\$ 67,866
	Engineering									
9.6	Design Engineering	1.00	LS		542,924.84		\$ -	\$ 542,925	\$ -	\$ 542,925
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		47,505.92		\$ -	\$ 47,506	\$ -	\$ 47,506
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		254,496.02		\$ -	\$ 254,496	\$ -	\$ 254,496
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		20,359.68		\$ -	\$ 20,360	\$ -	\$ 20,360
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			83,963.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	2,518.89	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 640,000	\$ -	\$ -	\$ 640,000	\$ 640,000
9.20	Sales Tax on Materials	8.80%	LS	11,049,918.55			\$ 972,393	\$ -	\$ -	\$ 972,393
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		21,413.86		\$ -	\$ 21,414	\$ -	\$ 21,414
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283

Propel NY - TO49 BS3

6 - Existing Sprain Brook 345 kV Interconnection

Total: \$ 18,474,373

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
6 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 220,337	\$ 164,274	\$ 94,817	\$ 479,428
2. SUBSTATION FOUNDATIONS	\$ 1,177,446	\$ 706,038	\$ 455,635	\$ 2,339,119
3. SUBSTATION STRUCTURES	\$ 238,253	\$ 334,356	\$ 217,809	\$ 790,418
4. MAJOR EQUIPMENT	\$ 4,510,308	\$ 702,685	\$ 333,505	\$ 5,546,498
5. LOW VOLTAGE & CONTROL CABLE	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH	\$ 96,730	\$ 42,420	\$ 17,895	\$ 157,045
7. GROUND GRID	\$ 8,890	\$ 6,320	\$ 1,423	\$ 16,634
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 674,866	\$ 2,087,989	\$ 418,859	\$ 3,181,714
SUBTOTAL (Costs):	\$ 7,222,751	\$ 4,237,053	\$ 1,587,069	\$ 13,046,874
CONTRACTOR MARK-UP (OH&P)	\$ 1,300,095	\$ 762,670	\$ 285,672	\$ 2,348,437
SUBTOTAL:	\$ 8,522,846	\$ 4,999,723	\$ 1,872,742	\$ 15,395,311
CONTINGENCY ON ENTIRE PROJECT	\$ 1,704,569	\$ 999,945	\$ 374,548	\$ 3,079,062
TOTAL:	\$ 10,227,415	\$ 5,999,667	\$ 2,247,290	\$ 18,474,373

Description of Work:Interconnection Facilities to the existing Con Edison Sprain Brook Substation, located in the City of Yonkers, Westchester County. Sprain Brook Substation is an existing 345 kV AIS substation with a BAAH configuration.The Solution includes installing a new underground 345 kV line with a shunt reactor in new bay positions.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing Sprain Brook 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.4	ACRE	-	10,800.00	7,200.00	\$ -	\$ 4,320	\$ 2,880	\$ 7,200
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	481	SY	4.85	7.20	4.80	\$ 2,333	\$ 3,464	\$ 2,309	\$ 8,107
1.4	Strip and Dispose Top Soil	645	CY		24.50	10.50	\$ -	\$ 15,811	\$ 6,776	\$ 22,587
1.5	Site Grading- Excavation for Substation Pad	1,936	CY		9.00	6.00	\$ -	\$ 17,424	\$ 11,616	\$ 29,040
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,045	CY		21.00	9.00	\$ -	\$ 21,954.24	\$ 9,408.96	\$ 31,363.20
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,568	CY		2.40	1.60	\$ -	\$ 3,764	\$ 2,509	\$ 6,273
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,045	CY	25.00	2.40	1.60	\$ 26,136	\$ 2,509	\$ 1,673	\$ 30,318
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	1,936	SY	11.00	6.00	4.00	\$ 21,296	\$ 11,616	\$ 7,744	\$ 40,656
1.11	Site Surfacing - Aggregate 6" Thick	1,936	SY	16.50	4.50	3.00	\$ 31,944	\$ 8,712	\$ 5,808	\$ 46,464
1.12	7' Station Fence w/ Barbed Wire & Grounding	450	LF	13.85	13.85	6.92	\$ 6,232	\$ 6,232	\$ 3,116	\$ 15,579
1.13	40' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, drainage structures, UD lines	1	LS	89,529.60	38,400.00	18,120.00	\$ 89,530	\$ 38,400	\$ 18,120	\$ 146,050
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	146	LF	156.00	117.00	117.00	\$ 22,776	\$ 17,082	\$ 17,082	\$ 56,940
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 220,337	\$ 164,274	\$ 94,817	\$ 479,428

[illegible]

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	4	EA	57,720.00	34,632.00	23,088.00	\$ 230,880	\$ 138,528	\$ 92,352	\$ 461,760
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	1	EA		323,400.00	138,600.00	\$ -	\$ 323,400	\$ 138,600	\$ 462,000
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	1	EA	980,000.00	57,239.00	24,531.00	\$ 980,000	\$ 57,239	\$ 24,531	\$ 1,061,770
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, IPO circuit breaker	2	EA	350,000.00	57,239.00	24,531.00	\$ 700,000	\$ 114,478	\$ 49,062	\$ 863,540
4.18	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	\$ 50,700	\$ 32,760	\$ 14,040	\$ 97,500
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil	0	LF	5.30	1.61	0.40	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 4,510,308	\$ 702,685	\$ 333,505	\$ 5,546,498
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,700	LF	11.15	10.80	5.40	\$ 30,105	\$ 29,160	\$ 14,580	\$ 73,845
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA							
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 96,730	\$ 42,420	\$ 17,895	\$ 157,045
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	880	LF	2.09	3.42	1.46	\$ 1,840	\$ 3,005	\$ 1,288	\$ 6,134
7.2	Caweld, DSA, 4/0 , T, CROSS	28	EA	165.00	75.00		\$ -	\$ 2,100	\$ -	\$ 6,720
7.3	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,430	\$ 1,215	\$ 135	\$ 3,780
TOTAL - GROUND GRID							\$ 8,890	\$ 6,320	\$ 1,423	\$ 16,634
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing Sprain Brook 345 kV_ Interconnection							\$ 6,547,886	\$ 2,149,064	\$ 1,168,210	\$ 9,865,160
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		116,104.61	49,759.12	\$ -	\$ 116,105	\$ 49,759	\$ 165,864
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		98,651.60		\$ -	\$ 98,652	\$ -	\$ 98,652
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		394,606.40		\$ -	\$ 394,606	\$ -	\$ 394,606
9.4	Utility PM and Project Oversight	1.0	LS		98,651.60		\$ -	\$ 98,652	\$ -	\$ 98,652
9.5	Site Accommodation, Facilities, Storage	1.0	LS	98,651.60			\$ 98,652	\$ -	\$ -	\$ 98,652
	Engineering									
9.6	Design Engineering	1.00	LS		789,212.81		\$ -	\$ 789,213	\$ -	\$ 789,213
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		69,056.12		\$ -	\$ 69,056	\$ -	\$ 69,056
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		369,943.50		\$ -	\$ 369,944	\$ -	\$ 369,944
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		98,651.60		\$ -	\$ 98,652	\$ -	\$ 98,652
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		29,595.48		\$ -	\$ 29,595	\$ -	\$ 29,595
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			822,958.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	24,688.74	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 360,000	\$ -	\$ -	\$ 360,000	\$ 360,000
9.20	Sales Tax on Materials	8.80%	LS	6,547,885.51			\$ 576,214	\$ -	\$ -	\$ 576,214
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,865.16		\$ -	\$ 9,865	\$ -	\$ 9,865
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 674,866	\$ 2,087,989	\$ 418,859	\$ 3,181,714

Propel NY - TO49 BS3

7 - Existing Ruland 138 kV Upgrade & Interconnection

Total: \$ 9,339,029

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
7 - Existing Ruland 138 kV_ Upgrade & Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 128,372	\$ 144,027	\$ 80,858	\$ 353,257
2. SUBSTATION FOUNDATIONS	\$ 552,928	\$ 423,460	\$ 274,263	\$ 1,250,651
3. SUBSTATION STRUCTURES	\$ 160,564	\$ 121,039	\$ 114,383	\$ 395,986
4. MAJOR EQUIPMENT	\$ 1,478,428	\$ 194,390	\$ 81,596	\$ 1,754,413
5. LOW VOLTAGE & CONTROL CABLE	\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
6. CONDUIT & CABLE TRENCH	\$ 322,346	\$ 213,089	\$ 100,110	\$ 635,545
7. GROUND GRID	\$ 62,882	\$ 45,524	\$ 10,639	\$ 119,045
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 311,900	\$ 1,073,391	\$ 225,205	\$ 1,610,496
SUBTOTAL (Costs):	\$ 3,289,756	\$ 2,378,925	\$ 926,678	\$ 6,595,359
CONTRACTOR MARK-UP (OH&P)	\$ 592,156	\$ 428,207	\$ 166,802	\$ 1,187,165
SUBTOTAL:	\$ 3,881,912	\$ 2,807,132	\$ 1,093,480	\$ 7,782,524
CONTINGENCY ON ENTIRE PROJECT	\$ 776,382	\$ 561,426	\$ 218,696	\$ 1,556,505
TOTAL:	\$ 4,658,294	\$ 3,368,558	\$ 1,312,176	\$ 9,339,029

Description of Work: Upgrades and Potential Interconnection Facilities to the existing LIPA Ruland Road Substation, located in the Hamlet of Melville, Town of Huntington, Suffolk County. Ruland Road Substation is an existing 138 kV AIS substation configured with six (6) BAAH bays. The Solution includes installing two (2) air core reactors in series to the 138 kV Lines 138-561 and 138-562, respectively, which are proposed as Upgrades and two (2) 138 kV circuit breakers, which are proposed as Potential Interconnection Facilities

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 6,480	\$ 4,320	\$ 10,800
1.2	Demolition	1	LS	-	4,800.00	3,200.00	\$ -	\$ 4,800	\$ 3,200	\$ 8,000
1.3	New Access Road - 20'	489	SY	4.85	7.20	4.80	\$ 2,371	\$ 3,520	\$ 2,347	\$ 8,238
1.4	Strip and Dispose Top Soil	968	CY		24.50	10.50	\$ -	\$ 23,716	\$ 10,164	\$ 33,880
1.5	Site Grading- Excavation for Substation Pad	2,904	CY		9.00	6.00	\$ -	\$ 26,136	\$ 17,424	\$ 43,560
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,568	CY		21.00	9.00	\$ -	\$ 32,931.36	\$ 14,113.44	\$ 47,044.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,352	CY		2.40	1.60	\$ -	\$ 5,645	\$ 3,764	\$ 9,409
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,568	CY	25.00	2.40	1.60	\$ 39,204	\$ 3,764	\$ 2,509	\$ 45,477
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	2,904	SY	11.00	6.00	4.00	\$ 31,944	\$ 17,424	\$ 11,616	\$ 60,984
1.11	Site Surfacing - Aggregate 6" Thick	2,904	SY	16.50	4.50	3.00	\$ 47,916	\$ 13,068	\$ 8,712	\$ 69,696
1.12	7' Station Fence w/ Barbed Wire & Grounding	220	LF	13.85	13.85	6.92	\$ 3,047	\$ 3,047	\$ 1,523	\$ 7,616
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 128,372	\$ 144,027	\$ 80,858	\$ 353,257
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	\$ 116,803	\$ 133,489	\$ 83,430	\$ 333,722
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	\$ 102,429	\$ 117,062	\$ 73,164	\$ 292,655
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80"	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 552,928	\$ 423,460	\$ 274,263	\$ 1,250,651
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,279.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	\$ 85,800	\$ 51,480	\$ 68,640	\$ 205,920
3.23	AL. Bus Tubing, 5" SCH 80	126	LF	25.00	184.94	123.29	\$ 3,150	\$ 23,302	\$ 15,535	\$ 41,987
3.24	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	\$ 3,780	\$ 3,780	\$ 1,890	\$ 9,450
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 160,564	\$ 121,039	\$ 114,383	\$ 395,986
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	6	EA	10,000.00	7,970.08	3,415.75	\$ 60,000	\$ 47,821	\$ 20,495	\$ 128,315
4.24	138kV, Air core reactors (3 Ph)	6	EA	40,500.00	6,500.00	2,500.00	\$ 243,000	\$ 39,000	\$ 15,000	\$ 297,000
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,478,428	\$ 194,390	\$ 81,596	\$ 1,754,413
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	19,200	LF	5.30	1.43	0.29	\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,900	LF	11.15	10.80	5.40	\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	300	LF	266.50	53.04	13.26	\$ 79,950	\$ 15,912	\$ 3,978	\$ 99,840
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.9	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.12	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
TOTAL - CONDUIT & CABLE TRENCH							\$ 322,346	\$ 213,089	\$ 100,110	\$ 635,545
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,500	LF	2.09	3.42	1.46	\$ 13,592	\$ 22,199	\$ 9,514	\$ 45,305
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		\$ 29,040	\$ 13,200	\$ -	\$ 42,240
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	\$ 20,250	\$ 10,125	\$ 1,125	\$ 31,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - GROUND GRID							\$ 62,882	\$ 45,524	\$ 10,639	\$ 119,045
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
7 - Existing Ruland 138 kV_ Upgrade & Interconnection							\$ 2,977,856	\$ 1,305,534	\$ 701,473	\$ 4,984,863
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		70,245.26	30,105.11	\$ -	\$ 70,245	\$ 30,105	\$ 100,350
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		199,394.54		\$ -	\$ 199,395	\$ -	\$ 199,395
9.4	Utility PM and Project Oversight	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.5	Site Accommodation, Facilities, Storage	1.0	LS	49,848.63			\$ 49,849	\$ -	\$ -	\$ 49,849
	Engineering									
9.6	Design Engineering	1.00	LS		398,789.08		\$ -	\$ 398,789	\$ -	\$ 398,789
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		34,894.04		\$ -	\$ 34,894	\$ -	\$ 34,894
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		186,932.38		\$ -	\$ 186,932	\$ -	\$ 186,932
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		14,954.59		\$ -	\$ 14,955	\$ -	\$ 14,955
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	51,052.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	1,531.56	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 186,000	\$ -	\$ -	\$ 186,000	\$ 186,000
9.20	Sales Tax on Materials	8.80%	LS	2,977,855.99			\$ 262,051	\$ -	\$ -	\$ 262,051
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,984.86		\$ -	\$ 4,985	\$ -	\$ 4,985
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 311,900	\$ 1,073,391	\$ 225,205	\$ 1,610,496

Propel NY - TO49 BS3

8 -Existing Shore Road 138 kV Interconnection

Total: \$ 11,923,278

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
8 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 581,223	\$ 386,312	\$ 254,245	\$ 1,221,780
3. SUBSTATION STRUCTURES	\$ 239,991	\$ 328,920	\$ 214,495	\$ 783,407
4. MAJOR EQUIPMENT	\$ 2,326,452	\$ 217,004	\$ 93,002	\$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE	\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
6. CONDUIT & CABLE TRENCH	\$ 348,046	\$ 218,596	\$ 97,101	\$ 663,742
7. GROUND GRID	\$ 27,450	\$ 18,156	\$ 3,495	\$ 49,101
8. CONTROL ENCLOSURE	\$ 343,281	\$ 352,625	\$ 120,656	\$ 816,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 419,013	\$ 1,351,818	\$ 255,389	\$ 2,026,220
SUBTOTAL (Costs):	\$ 4,453,917	\$ 2,918,984	\$ 1,047,493	\$ 8,420,394
CONTRACTOR MARK-UP (OH&P)	\$ 801,705	\$ 525,417	\$ 188,549	\$ 1,515,671
SUBTOTAL:	\$ 5,255,622	\$ 3,444,401	\$ 1,236,042	\$ 9,936,065
CONTINGENCY ON ENTIRE PROJECT	\$ 1,051,124	\$ 688,880	\$ 247,208	\$ 1,987,213
TOTAL:	\$ 6,306,746	\$ 4,133,281	\$ 1,483,251	\$ 11,923,278

Description of Work: Interconnection Facilities to the existing LIPA Shore Road Substation, located in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. Shore Road Substation is an existing 138 kV AIS substation with a main-tie main configuration. The Solution includes installing two (2) additional circuit breakers to create a six (6) position ring bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 -Existing Shore Road 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	18	CY	703.89	804.44	502.78	\$ 12,514	\$ 14,301	\$ 8,938	\$ 35,753
2.24	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.25	138kV, Bus support-1 Ph, low	77	CY	703.89	804.44	502.78	\$ 54,298	\$ 62,055	\$ 38,784	\$ 155,136
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	16	EA	18,000.00	3,200.00	2,800.00	\$ 288,000	\$ 51,200	\$ 44,800	\$ 384,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 581,223	\$ 386,312	\$ 254,245	\$ 1,221,780
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.16	138kV, Bus support-1 Ph, low	19	EA	2,782.00	1,919.84	1,279.89	\$ 52,858	\$ 36,477	\$ 24,318	\$ 113,653
3.17	138kV, Disconnect Switch	3	EA	5,694.00	3,928.86	2,619.24	\$ 17,082	\$ 11,787	\$ 7,858	\$ 36,726
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	957	LF	25.00	184.94	123.29	\$ 23,925	\$ 176,986	\$ 117,990	\$ 318,901
3.24	AL. Bus fittings	1	LS	28,710.00	28,710.00	14,355.00	\$ 28,710	\$ 28,710	\$ 14,355	\$ 71,775
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 239,991	\$ 328,920	\$ 214,495	\$ 783,407
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	4	EA	510,000.00	13,559.00	5,811.00	\$ 2,040,000	\$ 54,236	\$ 23,244	\$ 2,117,480
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	12	EA	10,000.00	7,970.08	3,415.75	\$ 120,000	\$ 95,641	\$ 40,989	\$ 256,630
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 2,326,452	\$ 217,004	\$ 93,002	\$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	31,800	LF	5.30	1.43	0.29	\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,450	LF	11.15	10.80	5.40	\$ 71,918	\$ 69,660	\$ 34,830	\$ 176,408
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	450	LF	266.50	53.04	13.26	\$ 119,925	\$ 23,868	\$ 5,967	\$ 149,760
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	225	LF	81.00	107.00	57.00	\$ 18,225	\$ 24,075	\$ 12,825	\$ 55,125
6.9	138kV UG- Cable	675	LF	156.00	94.00	62.00	\$ 105,300	\$ 63,450	\$ 41,850	\$ 210,600
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	225	LF	7.40	3.33	2.22	\$ 1,664	\$ 749	\$ 500	\$ 2,913
6.12	Ground Continuity Conductor	225	LF	13.04	7.53	5.02	\$ 2,934	\$ 1,694	\$ 1,129	\$ 5,756
TOTAL - CONDUIT & CABLE TRENCH							\$ 348,046	\$ 218,596	\$ 97,101	\$ 663,742
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,224	LF	2.09	3.42	1.46	\$ 4,650	\$ 7,596	\$ 3,255	\$ 15,501
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID		-					\$ 27,450	\$ 18,156	\$ 3,495	\$ 49,101
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.8	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							\$ 343,281	\$ 352,625	\$ 120,656	\$ 816,562
8 -Existing Shore Road 138 kV_ Interconnection							\$ 4,034,903	\$ 1,567,166	\$ 792,104	\$ 6,394,174
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		82,574.45	35,389.05	\$ -	\$ 82,574	\$ 35,389	\$ 117,964
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		255,766.94		\$ -	\$ 255,767	\$ -	\$ 255,767
9.4	Utility PM and Project Oversight	1.0	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.5	Site Accommodation, Facilities, Storage	1.0	LS	63,941.74			\$ 63,942	\$ -	\$ -	\$ 63,942
	Engineering									
9.6	Design Engineering	1.00	LS		511,533.89		\$ -	\$ 511,534	\$ -	\$ 511,534
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		-		\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		44,759.22		\$ -	\$ 44,759	\$ -	\$ 44,759
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		239,781.51		\$ -	\$ 239,782	\$ -	\$ 239,782
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		19,182.52		\$ -	\$ 19,183	\$ -	\$ 19,183
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			242,657.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	7,279.71	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 220,000	\$ -	\$ -	\$ 220,000	\$ 220,000
9.20	Sales Tax on Materials	8.80%	LS	4,034,903.48			\$ 355,072	\$ -	\$ -	\$ 355,072
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,394.17		\$ -	\$ 6,394	\$ -	\$ 6,394
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 419,013	\$ 1,351,818	\$ 255,389	\$ 2,026,220

9 -Existing Holbrook 138 Kv Upgrade

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
9 -Existing Holbrook 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220
SUBTOTAL (Costs):	\$ 830,227	\$ 415,860	\$ 100,777	\$ 1,346,865
CONTRACTOR MARK-UP (OH&P)	\$ 149,441	\$ 74,855	\$ 18,140	\$ 242,436
SUBTOTAL:	\$ 979,668	\$ 490,715	\$ 118,917	\$ 1,589,301
CONTINGENCY ON ENTIRE PROJECT	\$ 195,934	\$ 98,143	\$ 23,783	\$ 317,860
TOTAL:	\$ 1,175,602	\$ 588,858	\$ 142,701	\$ 1,907,161

[illegible]

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80"	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9 -Existing Holbrook 138 Kv_ Upgrade							\$ 753,760	\$ 202,826	\$ 57,059	\$ 1,013,645
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,095.98	3,898.28	\$ -	\$ 9,096	\$ 3,898	\$ 12,994
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		40,545.79		\$ -	\$ 40,546	\$ -	\$ 40,546
9.4	Utility PM and Project Oversight	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.5	Site Accommodation, Facilities, Storage	1.0	LS	10,136.45			\$ 10,136	\$ -	\$ -	\$ 10,136
	Engineering									
9.6	Design Engineering	1.00	LS		81,091.59		\$ -	\$ 81,092	\$ -	\$ 81,092
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		7,095.51		\$ -	\$ 7,096	\$ -	\$ 7,096
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		38,011.68		\$ -	\$ 38,012	\$ -	\$ 38,012
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,040.93		\$ -	\$ 3,041	\$ -	\$ 3,041
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 38,000	\$ -	\$ -	\$ 38,000	\$ 38,000
9.20	Sales Tax on Materials	8.80%	LS	753,759.78			\$ 66,331	\$ -	\$ -	\$ 66,331
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,013.64		\$ -	\$ 1,014	\$ -	\$ 1,014
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220

10 -Existing Newbridge 138 Kv Upgrade

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
10 -Existing Newbridge 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS	\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867
SUBTOTAL (Costs):	\$ 2,420,697	\$ 677,764	\$ 181,196	\$ 3,279,658
CONTRACTOR MARK-UP (OH&P)	\$ 435,726	\$ 121,998	\$ 32,615	\$ 590,338
SUBTOTAL:	\$ 2,856,423	\$ 799,762	\$ 213,811	\$ 3,869,996
CONTINGENCY ON ENTIRE PROJECT	\$ 571,285	\$ 159,952	\$ 42,762	\$ 773,999
TOTAL:	\$ 3,427,707	\$ 959,714	\$ 256,574	\$ 4,643,995

[illegible]

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	920,000.00	13,559.00	5,811.00	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10 -Existing Newbridge 138 Kv_ Upgrade							\$ 2,202,270	\$ 177,052	\$ 83,468	\$ 2,462,790
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,118.21	3,907.81	\$ -	\$ 9,118	\$ 3,908	\$ 13,026
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		98,511.60		\$ -	\$ 98,512	\$ -	\$ 98,512
9.4	Utility PM and Project Oversight	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.5	Site Accommodation, Facilities, Storage	1.0	LS	24,627.90			\$ 24,628	\$ -	\$ -	\$ 24,628
	Engineering									
9.6	Design Engineering	1.00	LS		197,023.21		\$ -	\$ 197,023	\$ -	\$ 197,023
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		17,239.53		\$ -	\$ 17,240	\$ -	\$ 17,240
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		92,354.63		\$ -	\$ 92,355	\$ -	\$ 92,355
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		7,388.37		\$ -	\$ 7,388	\$ -	\$ 7,388
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 92,000	\$ -	\$ -	\$ 92,000	\$ 92,000
9.20	Sales Tax on Materials	8.80%	LS	2,202,269.72			\$ 193,800	\$ -	\$ -	\$ 193,800
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,462.79		\$ -	\$ 2,463	\$ -	\$ 2,463
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	\$ 116,803	\$ 133,489	\$ 83,430	\$ 333,722
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	\$ 102,429	\$ 117,062	\$ 73,164	\$ 292,655
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 328,144	\$ 375,022	\$ 234,389	\$ 937,555
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	\$ 85,800	\$ 51,480	\$ 68,640	\$ 205,920
3.23	AL. Bus Tubing, 5" SCH 80	500	LF	25.00	184.94	123.29	\$ 12,500	\$ 92,469	\$ 61,646	\$ 166,615
3.24	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 223,280	\$ 224,937	\$ 181,778	\$ 629,995
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA			5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	6	EA	37,700.00	11,875.50	5,089.50	\$ 226,200	\$ 71,253	\$ 30,537	\$ 327,990
4.23	138kV, Cable sealing end	18	EA	4,446.00	1,050.00	450.00	\$ 80,028	\$ 18,900	\$ 8,100	\$ 107,028
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	6	EA	46,833.00	6,500.00	2,500.00	\$ 280,998	\$ 39,000	\$ 15,000	\$ 334,998
4.26	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 640,578	\$ 179,553	\$ 75,237	\$ 895,368
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	225	LF	266.50	53.04	13.26	\$ 59,963	\$ 11,934	\$ 2,984	\$ 74,880
6.7	345kV UG- Conduit		LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	\$ 299,700	\$ 395,900	\$ 210,900	\$ 906,500
6.11	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	\$ 1,731,600	\$ 1,043,400	\$ 688,200	\$ 3,463,200
6.12	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.13	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	\$ 27,369	\$ 12,323	\$ 8,215	\$ 47,908
6.14	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	\$ 48,244	\$ 27,850	\$ 18,567	\$ 94,661
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,348,736	\$ 1,714,967	\$ 935,346	\$ 4,999,048
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,402	LF	2.09	3.42	1.46	\$ 7,114	\$ 11,619	\$ 4,980	\$ 23,712
7.2	Caweld, DSA, 4/0 , T, CROSS	102	EA	165.00	75.00		\$ 16,830	\$ 7,650	\$ -	\$ 24,480
7.3	Ground Rod, 3/4" x 15'	80	EA	135.00	67.50	7.50	\$ 10,800	\$ 5,400	\$ 600	\$ 16,800
TOTAL - GROUND GRID							\$ 34,744	\$ 24,669	\$ 5,580	\$ 64,992
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	356,309.62	249,416.73	106,892.89	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
11 - Existing EGC 138 kV_ Upgrade							\$ 3,817,657	\$ 2,782,265	\$ 1,596,021	\$ 8,195,943
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		153,240.00	65,674.29	\$ -	\$ 153,240	\$ 65,674	\$ 218,914
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		327,837.72		\$ -	\$ 327,838	\$ -	\$ 327,838
9.4	Utility PM and Project Oversight	1.0	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.5	Site Accommodation, Facilities, Storage	1.0	LS	81,959.43			\$ 81,959	\$ -	\$ -	\$ 81,959
	Engineering									
9.6	Design Engineering	1.00	LS		655,675.44		\$ -	\$ 655,675	\$ -	\$ 655,675
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		57,371.60		\$ -	\$ 57,372	\$ -	\$ 57,372
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		307,347.86		\$ -	\$ 307,348	\$ -	\$ 307,348
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.13	Environmental-special studies/investigation	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		24,587.83		\$ -	\$ 24,588	\$ -	\$ 24,588
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
9.20	Sales Tax on Materials	8.80%	LS	3,817,657.30			\$ 335,954	\$ -	\$ -	\$ 335,954
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		8,195.94		\$ -	\$ 8,196	\$ -	\$ 8,196
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 417,913	\$ 1,785,595	\$ 369,314	\$ 2,572,822

Propel NY - TO49 BS3

12 - Existing Rainey 345 kV Upgrade

Total: \$ 9,824,483

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS	\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879
SUBTOTAL (Costs):	\$ 4,800,582	\$ 1,658,463	\$ 479,150	\$ 6,938,195
CONTRACTOR MARK-UP (OH&P)	\$ 864,105	\$ 298,523	\$ 86,247	\$ 1,248,875
SUBTOTAL:	\$ 5,664,686	\$ 1,956,986	\$ 565,397	\$ 8,187,070
CONTINGENCY ON ENTIRE PROJECT	\$ 1,132,937	\$ 391,397	\$ 113,079	\$ 1,637,414
TOTAL:	\$ 6,797,623	\$ 2,348,384	\$ 678,476	\$ 9,824,483

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of two new breakers in series with the existing 345 kV CB -1E and CB-6E respectively, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Existing Rainey 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	90,000.00	60,000.00	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	40,089.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 90,000	\$ 60,000	\$ 150,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	6	EA	18,000.00	3,200.00	2,800.00	\$ 108,000	\$ 19,200	\$ 16,800	\$ 144,000
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	4	EA	980,000.00	57,239.00	24,531.00	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
12 - Existing Rainey 345 kV_ Upgrade							\$ 4,364,337	\$ 587,278	\$ 266,700	\$ 5,218,315

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		29,889.25	12,809.68	\$ -	\$ 29,889	\$ 12,810	\$ 42,699
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		208,732.61		\$ -	\$ 208,733	\$ -	\$ 208,733
9.4	Utility PM and Project Oversight	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.5	Site Accommodation, Facilities, Storage	1.0	LS	52,183.15			\$ 52,183	\$ -	\$ -	\$ 52,183
	Engineering									
9.6	Design Engineering	1.00	LS		417,465.22		\$ -	\$ 417,465	\$ -	\$ 417,465
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		36,528.21		\$ -	\$ 36,528	\$ -	\$ 36,528
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		195,686.82		\$ -	\$ 195,687	\$ -	\$ 195,687
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,654.95		\$ -	\$ 15,655	\$ -	\$ 15,655
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 196,000	\$ -	\$ -	\$ 196,000	\$ 196,000
9.20	Sales Tax on Materials	8.80%	LS	4,364,336.72			\$ 384,062	\$ -	\$ -	\$ 384,062
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,218.32		\$ -	\$ 5,218	\$ -	\$ 5,218
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818
2.2	345kV, A Frame 70'-one bay	293	CY	703.89	804.44	502.78	\$ 206,435	\$ 235,926	\$ 147,454	\$ 589,815
2.3	345kV, A Frame 70'-two bay	660	CY	703.89	804.44	502.78	\$ 464,480	\$ 530,834	\$ 331,771	\$ 1,327,085
2.4	345kV, Bus support-3 Ph	380	CY	703.89	804.44	502.78	\$ 267,589	\$ 305,816	\$ 191,135	\$ 764,540
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	523	CY	703.89	804.44	502.78	\$ 367,935	\$ 420,497	\$ 262,811	\$ 1,051,242
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.14	345kV, CCVT	144	CY	703.89	804.44	502.78	\$ 101,676	\$ 116,201	\$ 72,626	\$ 290,503
2.15	345kV, Disconnect Switch	222	CY	703.89	804.44	502.78	\$ 156,094	\$ 178,393	\$ 111,495	\$ 445,982
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.18	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.21	345kV, Circuit Breaker (PASS)	260	CY	703.89	804.44	502.78	\$ 183,010	\$ 209,154	\$ 130,722	\$ 522,886
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	232	CY	703.89	804.44	502.78	\$ 163,301	\$ 186,630	\$ 116,644	\$ 466,575
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'		EA							
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 3,103,975	\$ 3,293,813	\$ 2,028,819	\$ 8,426,607
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	2	EA	48,100.00	28,860.00	19,240.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.3	345kV, A Frame 70'-two bay	3	EA	86,580.00	51,948.00	34,632.00	\$ 259,740	\$ 155,844	\$ 103,896	\$ 519,480
3.3	345kV, Bus support-3 Ph	24	EA	8,346.00	5,758.74	3,839.16	\$ 200,304	\$ 138,210	\$ 92,140	\$ 430,654
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	66	EA	4,810.00	2,886.00	1,924.00	\$ 317,460	\$ 190,476	\$ 126,984	\$ 634,920
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.13	345kV, CCVT	27	EA	4,810.00	2,886.00	1,924.00	\$ 129,870	\$ 77,922	\$ 51,948	\$ 259,740
3.14	345kV, Disconnect Switch	7	EA	19,240.00	11,544.00	7,696.00	\$ 134,680	\$ 80,808	\$ 53,872	\$ 269,360
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	2,457	LF	25.00	184.94	123.29	\$ 61,425	\$ 454,393	\$ 302,928	\$ 818,746
3.24	AL. Bus fittings	1	LS	73,710.00	73,710.00	36,855.00	\$ 73,710	\$ 73,710	\$ 36,855	\$ 184,275

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,371,903	\$ 1,294,951	\$ 851,016	\$ 3,517,870
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	27	EA	27,144.00	5,460.00	2,340.00	\$ 732,888	\$ 147,420	\$ 63,180	\$ 943,488
4.6	345kV, CCVT	27	EA	16,900.00	15,941.99	6,832.28	\$ 456,300	\$ 430,434	\$ 184,472	\$ 1,071,205
4.7	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	1	EA	3,633,158.00	3,520.00	880.00	\$ 3,633,158	\$ 3,520	\$ 880	\$ 3,637,558
4.11	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	2	EA		410,025.00	175,725.00	\$ -	\$ 820,050	\$ 351,450	\$ 1,171,500
4.14	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- PAR	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.15	345kV, Circuit Breaker (PASS)	13	EA	980,000.00	57,239.00	24,531.00	\$ 12,740,000	\$ 744,107	\$ 318,903	\$ 13,803,010
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	24	EA	8,450.00	5,460.00	2,340.00	\$ 202,800	\$ 131,040	\$ 56,160	\$ 390,000
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 37,653,933	\$ 3,297,803	\$ 1,460,933	\$ 42,412,668
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	89,100	LF	5.30	1.43	0.29	\$ 472,007	\$ 127,636	\$ 25,527	\$ 625,170
5.2	300V Copper 12/c TC XHHW/CPE 10AWG		LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 472,007	\$ 127,636	\$ 25,527	\$ 625,170
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	17,100	LF	11.15	10.80	5.40	\$ 190,665	\$ 184,680	\$ 92,340	\$ 467,685
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	875	LF	266.50	53.04	13.26	\$ 233,188	\$ 46,410	\$ 11,603	\$ 291,200
6.7	345kV UG- Conduit	1,800	LF	230.08	133.40	55.96	\$ 414,140	\$ 240,122	\$ 100,726	\$ 754,988
6.8	345kV UG- Cable	6,600	LF	175.00	105.00	70.00	\$ 1,155,000	\$ 693,000	\$ 462,000	\$ 2,310,000
6.9	345kV UG- Termination	18	EA	27,144.00	9,048.00	6,032.00	\$ 488,592	\$ 162,864	\$ 108,576	\$ 760,032
6.10	Fiber Optic Cable	1,800	LF	7.40	3.33	2.22	\$ 13,315	\$ 5,995	\$ 3,997	\$ 23,306
6.11	Ground Continuity Conductor	1,800	LF	13.04	7.53	5.02	\$ 23,470	\$ 13,549	\$ 9,032	\$ 46,051
6.12	138kV UG- Conduit	0	LF				\$ -	\$ -	\$ -	\$ -
6.13	138kV UG- Cable	0	LF				\$ -	\$ -	\$ -	\$ -
6.14	138kV UG- Termination	0	EA							
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,518,369	\$ 1,346,620	\$ 788,274	\$ 4,653,263
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,760	LF	2.09	3.42	1.46	\$ 45,500	\$ 74,317	\$ 31,850	\$ 151,667
7.2	Caweld, DSA, 4/0 , T, CROSS	578	EA	165.00	75.00		\$ 95,370	\$ 43,350	\$ -	\$ 138,720
7.3	Ground Rod, 3/4" x 15'	528	EA	135.00	67.50	7.50	\$ 71,280	\$ 35,640	\$ 3,960	\$ 110,880
TOTAL - GROUND GRID							\$ 212,150	\$ 153,307	\$ 35,810	\$ 401,267
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	356,309.62	249,416.73	106,892.89	\$ 356,310	\$ 249,417	\$ 106,893	\$ 712,619
8.2	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.3	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.4	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.5	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator,	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,471,622	\$ 1,193,966	\$ 396,655	\$ 3,062,244
13 - Existing EGC 345 kV_ Upgrade							\$ 47,495,509	\$ 11,636,470	\$ 6,196,513	\$ 65,328,492
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		624,154.42	267,494.75	\$ -	\$ 624,154	\$ 267,495	\$ 891,649
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		653,284.92		\$ -	\$ 653,285	\$ -	\$ 653,285
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,613,139.70		\$ -	\$ 2,613,140	\$ -	\$ 2,613,140
9.4	Utility PM and Project Oversight	1.0	LS		653,284.92		\$ -	\$ 653,285	\$ -	\$ 653,285
9.5	Site Accommodation, Facilities, Storage	1.0	LS	653,284.92			\$ 653,285	\$ -	\$ -	\$ 653,285
	Engineering									
9.6	Design Engineering	1.00	LS		5,226,279.40		\$ -	\$ 5,226,279	\$ -	\$ 5,226,279
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		457,299.45		\$ -	\$ 457,299	\$ -	\$ 457,299
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,449,818.47		\$ -	\$ 2,449,818	\$ -	\$ 2,449,818
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		653,284.92		\$ -	\$ 653,285	\$ -	\$ 653,285
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		195,985.48		\$ -	\$ 195,985	\$ -	\$ 195,985
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			27,000,000	\$ -	\$ -	\$ 27,000,000	\$ 27,000,000
9.17	Legal Fees (Real estate)	1.00	LS		-	810,000.00	\$ -	\$ -	\$ 810,000	\$ 810,000
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,240,000	\$ -	\$ -	\$ 3,240,000	\$ 3,240,000
9.20	Sales Tax on Materials	8.80%	LS	47,495,509.06			\$ 4,179,605	\$ -	\$ -	\$ 4,179,605
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		65,328.49		\$ -	\$ 65,328	\$ -	\$ 65,328
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,832,890	\$ 13,612,057	\$ 31,326,595	\$ 49,771,542

Propel NY - TO49 BS3

BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits

Total: \$ 300,550,095

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,009,184	\$ 9,281,350	\$ 3,907,834	\$ 15,198,368
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 20,983,664	\$ 18,881,946	\$ 12,931,534	\$ 52,797,144
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 51,016,413	\$ 30,754,077	\$ 19,609,958	\$ 101,380,448
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 8,265,782	\$ 26,249,323	\$ 8,361,827	\$ 42,876,932
SUBTOTAL (Costs):	\$ 82,275,043	\$ 85,166,696	\$ 44,811,153	\$ 212,252,892
CONTRACTOR MARK-UP (OH&P)	\$ 14,809,508	\$ 15,330,005	\$ 8,066,008	\$ 38,205,521
SUBTOTAL:	\$ 97,084,551	\$ 100,496,701	\$ 52,877,161	\$ 250,458,413
CONTINGENCY ON ENTIRE PROJECT	\$ 19,416,910	\$ 20,099,340	\$ 10,575,432	\$ 50,091,683
TOTAL:	\$ 116,501,461	\$ 120,596,042	\$ 63,452,593	\$ 300,550,095

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.
Barrett to EGC section is 8.76 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.76	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 6,132,000	\$ 2,628,000	\$ 8,760,000
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	46,253	LF	\$ 30	\$ 18	\$ 12	\$ 1,387,584	\$ 832,550	\$ 555,034	\$ 2,775,168
1.5	Police Support	3,600.0	HR		\$ 120	\$ 27	\$ -	\$ 432,000	\$ 97,200	\$ 529,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	8.76	Mile	\$ 60,000	\$ 180,000	\$ 60,000	\$ 525,600	\$ 1,576,800	\$ 525,600	\$ 2,628,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,009,184	\$ 9,281,350	\$ 3,907,834	\$ 15,198,368
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y51 & Y54 -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	8.76	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,224,648	\$ 816,432	\$ 2,041,080
2.2	Formwork in Trench	367,326	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 734,653	\$ 550,990	\$ 183,663	\$ 1,469,306
2.3	Trench Excavation	45,304	CY		\$ 17.5	\$ 7.5	\$ -	\$ 792,813	\$ 339,777	\$ 1,132,590
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,831	CY	\$ 50	\$ 25	\$ 14	\$ 141,574	\$ 69,371	\$ 39,641	\$ 250,585
2.5	Supply & Install Thermal Backfill -conduit level	24,981	CY	\$ 350	\$ 245	\$ 105	\$ 8,743,261	\$ 6,120,283	\$ 2,622,978	\$ 17,486,522
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,732	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,746,331	\$ 1,091,457	\$ 436,583	\$ 3,274,370
2.8	Conduit 8" HDPE	277,517	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,700,195	\$ 1,573,520	\$ 674,366	\$ 7,948,081
2.9	Conduit 4" HDPE	92,506	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 496,755	\$ 388,524	\$ 166,510	\$ 1,051,789
2.10	Conduit 2" HDPE	92,506	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 176,686	\$ 291,393	\$ 124,883	\$ 592,961
2.11	Warning Tape	46,253	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,938	\$ 11,563	\$ 4,625	\$ 23,126
2.12	Trench Box Shoring (Vault)	62	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,120,904	\$ 1,681,356	\$ 2,802,260
2.13	Splice Vault Excavation	20,150	CY		\$ 17.5	\$ 7.5	\$ -	\$ 352,625	\$ 151,125	\$ 503,750
2.14	Splice Vault Supply & Installation	62	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,170,000	\$ 1,023,000	\$ 2,387,000	\$ 5,580,000
2.15	Splice Vault Backfill	6,045	CY		\$ 14.0	\$ 6.0	\$ -	\$ 84,630	\$ 36,270	\$ 120,900
2.16	Jack and Bore along Route	104	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 166,400	\$ 332,800	\$ 332,800	\$ 832,000
2.17	HDD along Route	233	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 372,800	\$ 745,600	\$ 745,600	\$ 1,864,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	Air Test Ducts	462,528	LF			\$ 0.25	\$ -	\$ -	\$ 115,632	\$ 115,632
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	26,121	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 365,688	\$ 365,688	\$ 182,844	\$ 914,221
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,256	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 162,383	\$ 170,502	\$ 73,072	\$ 405,958
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	87	EA		\$ 400	\$ 1,200	\$ -	\$ 34,927	\$ 104,780	\$ 139,706
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	87	EA		\$ 10	\$ 15	\$ -	\$ 873	\$ 1,310	\$ 2,183
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	250	EA		\$ 400	\$ 1,200	\$ -	\$ 99,923	\$ 299,769	\$ 399,692
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 478,296	\$ 318,864	\$ -	\$ 478,296	\$ 318,864	\$ 797,160
2.24	Excess Materials Disposal to Certified Backfill	77,231	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,892,164	\$ 810,927	\$ 2,703,091
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	62	EA			\$ 4,000	\$ -	\$ -	\$ 248,000	\$ 248,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	65,454	CF		\$ 1.0	\$ 0.5	\$ -	\$ 65,454	\$ 32,727	\$ 98,180
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 20,983,664	\$ 18,881,946	\$ 12,931,534	\$ 52,797,144
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.7	Y51 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	145,696	FT	\$ 154	\$ 92	\$ 62	\$ 22,437,233	\$ 13,462,340	\$ 8,974,893	\$ 44,874,467
3.8	Y51 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	93	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,090,146	\$ 763,102	\$ 218,029	\$ 2,071,277
3.9	Y51 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y51 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y51 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y51 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.1	Y54 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	145,696	FT	\$ 154	\$ 92	\$ 62	\$ 22,437,233	\$ 13,462,340	\$ 8,974,893	\$ 44,874,467
3.2	Y54 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	93	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,090,146	\$ 763,102	\$ 218,029	\$ 2,071,277
3.3	Y54 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y54 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y54 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y54 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	62	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,643,028	\$ 1,150,120	\$ 492,908	\$ 3,286,056
3.11	Fiber Optic Cable	97,131	FT	\$ 7	\$ 3	\$ 2	\$ 718,477	\$ 323,504	\$ 215,669	\$ 1,257,651
3.12	Ground Continuity Conductor	97,131	FT	\$ 13	\$ 8	\$ 5	\$ 1,266,490	\$ 731,104	\$ 487,403	\$ 2,484,996
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 51,016,413	\$ 30,754,077	\$ 19,609,958	\$ 101,380,448
BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits							\$ 74,009,261	\$ 58,917,374	\$ 36,449,326	\$ 169,375,960
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,861,001	\$ 1,907,334	\$ -	\$ 2,861,001	\$ 1,907,334	\$ 4,768,335
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,693,759.60		\$ -	\$ 1,693,760	\$ -	\$ 1,693,760
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		6,775,038.41		\$ -	\$ 6,775,038	\$ -	\$ 6,775,038
4.4	Utility PM and Project Oversight	1.0	LS		1,693,759.60		\$ -	\$ 1,693,760	\$ -	\$ 1,693,760
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,693,759.60			\$ 1,693,760	\$ -	\$ -	\$ 1,693,760
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 8,468,798	\$ -	\$ -	\$ 8,468,798	\$ -	\$ 8,468,798
4.7	LiDAR /GPR	1.0	LS		\$ 304,877	\$ 203,251	\$ -	\$ 304,877	\$ 203,251	\$ 508,128
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 1,185,632		\$ -	\$ 1,185,632	\$ -	\$ 1,185,632
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,693,760		\$ -	\$ 1,693,760	\$ -	\$ 1,693,760
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 508,128		\$ -	\$ 508,128	\$ -	\$ 508,128
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 63,579	\$ -	\$ -	\$ 63,579	\$ 63,579
4.16	Legal Fees (Real estate)	1.00	LS		-	1,907.37	\$ -	\$ -	\$ 1,907	\$ 1,907
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,000,000	\$ -	\$ -	\$ 6,000,000	\$ 6,000,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 74,009,260.95			\$ 6,572,022	\$ -	\$ -	\$ 6,572,022
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 169,376	\$ -	\$ -	\$ 169,376	\$ 169,376
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 8,265,782	\$ 26,249,323	\$ 8,361,827	\$ 42,876,932

Propel NY - TO49 BS3

BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit

Total: \$ 546,334,828

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163
SUBTOTAL (Costs):	\$ 128,284,803	\$ 166,136,233	\$ 91,408,645	\$ 385,829,681
CONTRACTOR MARK-UP (OH&P)	\$ 23,091,265	\$ 29,904,522	\$ 16,453,556	\$ 69,449,343
SUBTOTAL:	\$ 151,376,067	\$ 196,040,755	\$ 107,862,202	\$ 455,279,024
CONTINGENCY ON ENTIRE PROJECT	\$ 30,275,213	\$ 39,208,151	\$ 21,572,440	\$ 91,055,805
TOTAL:	\$ 181,651,281	\$ 235,248,906	\$ 129,434,642	\$ 546,334,828

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.
Barrett to EGC section is 23.46 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	23.46	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 16,422,000	\$ 7,038,000	\$ 23,460,000
1.3	Flaggers	720	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,152,000	\$ 3,456,000	\$ 1,152,000	\$ 5,760,000
1.4	K Rail / Lane Control / Metal Plates	123,869	LF	\$ 30	\$ 18	\$ 12	\$ 3,716,064	\$ 2,229,638	\$ 1,486,426	\$ 7,432,128
1.5	Police Support	28,800.0	HR		\$ 120	\$ 27	\$ -	\$ 3,456,000	\$ 777,600	\$ 4,233,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	23.46	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 938,400	\$ 2,815,200	\$ 938,400	\$ 4,692,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	23.46	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 3,279,708	\$ 2,186,472	\$ 5,466,180
2.2	Formwork in Trench	878,054	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,756,109	\$ 1,317,082	\$ 439,027	\$ 3,512,218
2.3	Trench Excavation	75,773	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,326,025	\$ 568,296	\$ 1,894,321
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,736	SF	\$ 50	\$ 25	\$ 14	\$ 236,790	\$ 116,027	\$ 66,301	\$ 419,119
2.5	Supply & Install Thermal Backfill	41,830	CY	\$ 350	\$ 245	\$ 105	\$ 14,640,338	\$ 10,248,236	\$ 4,392,101	\$ 29,280,675
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,903	CY	\$ 200	\$ 125	\$ 50	\$ 3,380,509	\$ 2,112,818	\$ 845,127	\$ 6,338,455
2.9	Conduit 8" HDPE	371,606	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 7,632,795	\$ 2,107,008	\$ 903,004	\$ 10,642,807
2.10	Conduit 4" HDPE	123,869	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 665,175	\$ 520,249	\$ 222,964	\$ 1,408,388
2.11	Conduit 2" HDPE	123,869	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 236,589	\$ 390,187	\$ 167,223	\$ 793,999
2.12	Warning Tape	123,869	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,580	\$ 30,967	\$ 12,387	\$ 61,934
2.13	Trench Box Shoring (Vault)	80	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,446,328	\$ 2,169,492	\$ 3,615,819
2.14	Splice Vault Excavation	26,000	CY		\$ 17.5	\$ 7.5	\$ -	\$ 455,000	\$ 195,000	\$ 650,000
2.15	Splice Vault Supply & Installation	80	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,800,000	\$ 1,320,000	\$ 3,080,000	\$ 7,200,000
2.16	Splice Vault Backfill	7,800	CY		\$ 14.0	\$ 6.0	\$ -	\$ 109,200	\$ 46,800	\$ 156,000
2.17	Jack and Bore along Route	240	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 192,000	\$ 384,000	\$ 384,000	\$ 960,000
2.18	HDD along Route	11,072	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 8,857,600	\$ 17,715,200	\$ 17,715,200	\$ 44,288,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	619,344	LF			\$ 0.25	\$ -	\$ -	\$ 154,836	\$ 154,836
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	45,810	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 641,340	\$ 641,340	\$ 320,670	\$ 1,603,351
2.21	PVMT, AGGREGATE, 10", BASE COURSE	12,725	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 284,786	\$ 299,025	\$ 128,154	\$ 711,964
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	169	EA		\$ 400	\$ 1,200	\$ -	\$ 67,610	\$ 202,831	\$ 270,441
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	169	EA		\$ 10	\$ 15	\$ -	\$ 1,690	\$ 2,535	\$ 4,226
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	418	EA		\$ 400	\$ 1,200	\$ -	\$ 167,318	\$ 501,954	\$ 669,273
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,280,916	\$ 853,944	\$ -	\$ 1,280,916	\$ 853,944	\$ 2,134,860
2.26	Excess Materials Disposal to Certified Backfill	122,165	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,993,035	\$ 1,282,729	\$ 4,275,764
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	80	EA			\$ 4,000	\$ -	\$ -	\$ 320,000	\$ 320,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	101,773	CF		\$ 1.0	\$ 0.5	\$ -	\$ 101,773	\$ 50,886	\$ 152,659
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	390,187	FT	\$ 154	\$ 92	\$ 62	\$ 60,088,755	\$ 36,053,253	\$ 24,035,502	\$ 120,177,510
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	240	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,813,280	\$ 1,969,296	\$ 562,656	\$ 5,345,232
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	80	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,120,036	\$ 1,484,025	\$ 636,011	\$ 4,240,072
3.11	Fiber Optic Cable	130,062	FT	\$ 7	\$ 3	\$ 2	\$ 962,070	\$ 433,185	\$ 288,790	\$ 1,684,046
3.12	Ground Continuity Conductor	130,062	FT	\$ 13	\$ 8	\$ 5	\$ 1,695,882	\$ 978,978	\$ 652,652	\$ 3,327,512
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit							\$ 114,995,929	\$ 117,897,551	\$ 74,830,037	\$ 307,723,518
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,781,828	\$ 3,854,552	\$ -	\$ 5,781,828	\$ 3,854,552	\$ 9,636,379
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		12,308,940.71		\$ -	\$ 12,308,941	\$ -	\$ 12,308,941
4.4	Utility PM and Project Oversight	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.5	Site Accommodation, Facilities, Storage	1.0	LS	3,077,235.18			\$ 3,077,235	\$ -	\$ -	\$ 3,077,235
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 15,386,176	\$ -	\$ -	\$ 15,386,176	\$ -	\$ 15,386,176
4.7	LiDAR /GPR	1.0	LS		\$ 553,902	\$ 369,268	\$ -	\$ 553,902	\$ 369,268	\$ 923,171
4.8	Geotech	24.0	Location		2,730.00	1,820.00	\$ -	\$ 65,520	\$ 43,680	\$ 109,200
4.9	Surveying/Staking	1	LS		\$ 1,292,439		\$ -	\$ 1,292,439	\$ -	\$ 1,292,439
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,077,235		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.12	Environmental-special studies/investigation	1	LS		\$ 175,000		\$ -	\$ 175,000	\$ -	\$ 175,000
4.13	Warranties / LOC's	1	LS		\$ 923,171		\$ -	\$ 923,171	\$ -	\$ 923,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 1,050,859	\$ -	\$ -	\$ 1,050,859	\$ 1,050,859
4.16	Legal Fees (Real estate)	1.00	LS		-	31,525.77	\$ -	\$ -	\$ 31,526	\$ 31,526
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 10,920,000	\$ -	\$ -	\$ 10,920,000	\$ 10,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 114,995,929.25			\$ 10,211,639	\$ -	\$ -	\$ 10,211,639
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 307,724	\$ -	\$ -	\$ 307,724	\$ 307,724
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163

Propel NY - TO49 BS3

BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit

Total: \$ 14,344,237

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 355,831	\$ 1,668,541	\$ 441,153	\$ 2,465,524
SUBTOTAL (Costs):	\$ 3,499,803	\$ 4,546,049	\$ 2,084,259	\$ 10,130,111
CONTRACTOR MARK-UP (OH&P)	\$ 629,965	\$ 818,289	\$ 375,167	\$ 1,823,420
SUBTOTAL:	\$ 4,129,768	\$ 5,364,338	\$ 2,459,425	\$ 11,953,531
CONTINGENCY ON ENTIRE PROJECT	\$ 825,954	\$ 1,072,868	\$ 491,885	\$ 2,390,706
TOTAL:	\$ 4,955,721	\$ 6,437,206	\$ 2,951,310	\$ 14,344,237

Description of Work: reconductoring/conversion of an existing LIPA 138 kV circuit between the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County, to the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County, via the Newbridge Road Substation in the Hamlet of East Meadow in the Town of Hempstead in Nassau County. A new 0.6 mile 345 kV line will be spliced to the existing line, creating a continuous 345 kV feed between the substations. The routing would be the existing underground routing using the LIPA-owned transmission corridors.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.63	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 441,000	\$ 189,000	\$ 630,000
1.3	Flaggers	20	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 32,000	\$ 96,000	\$ 32,000	\$ 160,000
1.4	K Rail / Lane Control / Metal Plates	3,326	LF	\$ 30	\$ 18	\$ 12	\$ 99,792	\$ 59,875	\$ 39,917	\$ 199,584
1.5	Police Support	800.0	HR		\$ 120	\$ 27	\$ -	\$ 96,000	\$ 21,600	\$ 117,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	0.63	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 25,200	\$ 75,600	\$ 25,200	\$ 126,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.63	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 88,074	\$ 58,716	\$ 146,790
2.2	Formwork in Trench	25,771	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 51,542	\$ 38,657	\$ 12,886	\$ 103,085
2.3	Trench Excavation	2,224	CY		\$ 17.5	\$ 7.5	\$ -	\$ 38,919	\$ 16,680	\$ 55,599
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	139	SF	\$ 50	\$ 25	\$ 14	\$ 6,950	\$ 3,405	\$ 1,946	\$ 12,301
2.5	Supply & Install Thermal Backfill	1,228	CY	\$ 350	\$ 245	\$ 105	\$ 429,699	\$ 300,789	\$ 128,910	\$ 859,398
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	496	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 99,219	\$ 62,012	\$ 24,805	\$ 186,036
2.9	Conduit 8" HDPE	9,979	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 204,973	\$ 56,582	\$ 24,249	\$ 285,804
2.10	Conduit 4" HDPE	3,326	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 17,863	\$ 13,971	\$ 5,988	\$ 37,821
2.11	Conduit 2" HDPE	3,326	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 6,353	\$ 10,478	\$ 4,491	\$ 21,322
2.12	Warning Tape	3,326	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 499	\$ 832	\$ 333	\$ 1,663
2.13	Trench Box Shoring (Vault)	3	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 54,237	\$ 81,356	\$ 135,593
2.14	Splice Vault Excavation	975	CY		\$ 17.5	\$ 7.5	\$ -	\$ 17,063	\$ 7,313	\$ 24,375
2.15	Splice Vault Supply & Installation	3	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 105,000	\$ 49,500	\$ 115,500	\$ 270,000
2.16	Splice Vault Backfill	293	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,095	\$ 1,755	\$ 5,850
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	16,632	LF			\$ 0.25	\$ -	\$ -	\$ 4,158	\$ 4,158
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	1,387	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 19,417	\$ 19,417	\$ 9,708	\$ 48,542

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	385	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 8,622	\$ 9,053	\$ 3,880	\$ 21,555
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	5	EA		\$ 400	\$ 1,200	\$ -	\$ 1,984	\$ 5,953	\$ 7,938
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	5	EA		\$ 10	\$ 15	\$ -	\$ 50	\$ 74	\$ 124
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	12	EA		\$ 400	\$ 1,200	\$ -	\$ 4,911	\$ 14,733	\$ 19,643
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 34,398	\$ 22,932	\$ -	\$ 34,398	\$ 22,932	\$ 57,330
2.26	Excess Materials Disposal to Certified Backfill	3,778	CY		\$ 24.5	\$ 10.5	\$ -	\$ 92,571	\$ 39,673	\$ 132,244
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	3	EA			\$ 4,000	\$ -	\$ -	\$ 12,000	\$ 12,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	3,199	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,199	\$ 1,599	\$ 4,798
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	10,478	FT	\$ 154	\$ 92	\$ 62	\$ 1,613,637	\$ 968,182	\$ 645,455	\$ 3,227,273
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	9	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 105,498	\$ 73,849	\$ 21,100	\$ 200,446
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	3	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 79,501	\$ 55,651	\$ 23,850	\$ 159,003
3.11	Fiber Optic Cable	3,493	FT	\$ 7	\$ 3	\$ 2	\$ 25,836	\$ 11,633	\$ 7,755	\$ 45,224
3.12	Ground Continuity Conductor	3,493	FT	\$ 13	\$ 8	\$ 5	\$ 45,542	\$ 26,290	\$ 17,526	\$ 89,358
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit							\$ 3,143,972	\$ 2,877,508	\$ 1,643,106	\$ 7,664,587
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 135,618	\$ 90,412	\$ -	\$ 135,618	\$ 90,412	\$ 226,031
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		306,583.47		\$ -	\$ 306,583	\$ -	\$ 306,583
4.4	Utility PM and Project Oversight	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.5	Site Accommodation, Facilities, Storage	1.0	LS	76,645.87			\$ 76,646	\$ -	\$ -	\$ 76,646
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 383,229	\$ -	\$ -	\$ 383,229	\$ -	\$ 383,229
4.7	LiDAR /GPR	1.0	LS		\$ 13,796	\$ 9,198	\$ -	\$ 13,796	\$ 9,198	\$ 22,994
4.8	Geotech	1.0	Location		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 53,652		\$ -	\$ 53,652	\$ -	\$ 53,652
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 76,646		\$ -	\$ 76,646	\$ -	\$ 76,646
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 22,994		\$ -	\$ 22,994	\$ -	\$ 22,994
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 50,542	\$ -	\$ -	\$ 50,542	\$ 50,542
4.16	Legal Fees (Real estate)	1.00	LS		-	1,516.26	\$ -	\$ -	\$ 1,516	\$ 1,516
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 280,000	\$ -	\$ -	\$ 280,000	\$ 280,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 3,143,972			\$ 279,185	\$ -	\$ -	\$ 279,185
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 7,665	\$ -	\$ -	\$ 7,665	\$ 7,665
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 355,831	\$ 1,668,541	\$ 441,153	\$ 2,465,524

Propel NY - TO49 BS3

BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 211,488,737

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945
SUBTOTAL (Costs):	\$ 53,010,451	\$ 64,488,496	\$ 31,857,505	\$ 149,356,453
CONTRACTOR MARK-UP (OH&P)	\$ 9,541,881	\$ 11,607,929	\$ 5,734,351	\$ 26,884,162
SUBTOTAL:	\$ 62,552,333	\$ 76,096,426	\$ 37,591,856	\$ 176,240,614
CONTINGENCY ON ENTIRE PROJECT	\$ 12,510,467	\$ 15,219,285	\$ 7,518,371	\$ 35,248,123
TOTAL:	\$ 75,062,799	\$ 91,315,711	\$ 45,110,228	\$ 211,488,737

Description of Work: The proposed 345 kV and 138 kV electric underground transmission lines extending from the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County to the Shore Road Substation in the Glenwood Landing Hamlet in Nassau County. The proposed route will be approximately 10.3 miles, utilizing 4000 kcmil XLPE cable for the route.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,175,000	\$ 3,075,000	\$ 10,250,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	54,120	LF	\$ 30	\$ 18	\$ 12	\$ 1,623,600	\$ 974,160	\$ 649,440	\$ 3,247,200
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 410,000	\$ 1,230,000	\$ 410,000	\$ 2,050,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,432,950	\$ 955,300	\$ 2,388,250
2.2	Formwork in Trench	419,712	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 839,424	\$ 629,568	\$ 209,856	\$ 1,678,848
2.3	Trench Excavation	36,220	CY		\$ 17.5	\$ 7.5	\$ -	\$ 633,843	\$ 271,647	\$ 905,490
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,264	SF	\$ 50	\$ 25	\$ 14	\$ 113,186	\$ 55,461	\$ 31,692	\$ 200,340
2.5	Supply & Install Thermal Backfill	19,995	CY	\$ 350	\$ 245	\$ 105	\$ 6,998,115	\$ 4,898,680	\$ 2,099,434	\$ 13,996,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,079	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,615,891	\$ 1,009,932	\$ 403,973	\$ 3,029,796
2.9	Conduit 8" HDPE	162,360	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 3,334,874	\$ 920,581	\$ 394,535	\$ 4,649,990
2.10	Conduit 4" HDPE	54,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 290,624	\$ 227,304	\$ 97,416	\$ 615,344
2.11	Conduit 2" HDPE	54,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 103,369	\$ 170,478	\$ 73,062	\$ 346,909
2.12	Warning Tape	54,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,118	\$ 13,530	\$ 5,412	\$ 27,060
2.13	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.14	Splice Vault Excavation	11,375	CY		\$ 17.5	\$ 7.5	\$ -	\$ 199,063	\$ 85,313	\$ 284,375
2.15	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.16	Splice Vault Backfill	3,413	CY		\$ 14.0	\$ 6.0	\$ -	\$ 47,775	\$ 20,475	\$ 68,250
2.17	Jack and Bore along Route	113	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 90,400	\$ 180,800	\$ 180,800	\$ 452,000
2.18	HDD along Route	318	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 254,400	\$ 508,800	\$ 508,800	\$ 1,272,000
2.19	Air Test Ducts	270,600	LF			\$ 0.25	\$ -	\$ -	\$ 67,650	\$ 67,650
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,687	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 303,614	\$ 303,614	\$ 151,807	\$ 759,034

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,024	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 134,819	\$ 141,560	\$ 60,668	\$ 337,047
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	81	EA		\$ 400	\$ 1,200	\$ -	\$ 32,318	\$ 96,953	\$ 129,271
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	81	EA		\$ 10	\$ 15	\$ -	\$ 808	\$ 1,212	\$ 2,020
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	200	EA		\$ 400	\$ 1,200	\$ -	\$ 79,978	\$ 239,935	\$ 319,914
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 559,650	\$ 373,100	\$ -	\$ 559,650	\$ 373,100	\$ 932,750
2.26	Excess Materials Disposal to Certified Backfill	57,437	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,407,200	\$ 603,086	\$ 2,010,285
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	35	EA			\$ 4,000	\$ -	\$ -	\$ 140,000	\$ 140,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	47,595	CF		\$ 1.0	\$ 0.5	\$ -	\$ 47,595	\$ 23,797	\$ 71,392
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	170,478	FT	\$ 154	\$ 92	\$ 62	\$ 26,253,612	\$ 15,752,167	\$ 10,501,445	\$ 52,507,224
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	105	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,230,810	\$ 861,567	\$ 246,162	\$ 2,338,539
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	35	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 927,516	\$ 649,261	\$ 278,255	\$ 1,855,032
3.11	Fiber Optic Cable	56,826	FT	\$ 7	\$ 3	\$ 2	\$ 420,342	\$ 189,265	\$ 126,176	\$ 735,783
3.12	Ground Continuity Conductor	56,826	FT	\$ 13	\$ 8	\$ 5	\$ 740,954	\$ 427,729	\$ 285,153	\$ 1,453,836
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit							\$ 47,597,498	\$ 45,172,137	\$ 25,859,873	\$ 118,629,508
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,130,960	\$ 1,420,640	\$ -	\$ 2,130,960	\$ 1,420,640	\$ 3,551,600
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,745,180.33		\$ -	\$ 4,745,180	\$ -	\$ 4,745,180
4.4	Utility PM and Project Oversight	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,186,295.08			\$ 1,186,295	\$ -	\$ -	\$ 1,186,295
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,931,475	\$ -	\$ -	\$ 5,931,475	\$ -	\$ 5,931,475
4.7	LiDAR /GPR	1.0	LS		\$ 213,533	\$ 142,355	\$ -	\$ 213,533	\$ 142,355	\$ 355,889
4.8	Geotech	11.0	Location		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 830,407		\$ -	\$ 830,407	\$ -	\$ 830,407
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,186,295		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 355,889		\$ -	\$ 355,889	\$ -	\$ 355,889
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 72,803	\$ -	\$ -	\$ 72,803	\$ 72,803
4.16	Legal Fees (Real estate)	1.00	LS		-	2,184.09	\$ -	\$ -	\$ 2,184	\$ 2,184
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	100.00%	LS			\$ 4,220,000	\$ -	\$ -	\$ 4,220,000	\$ 4,220,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 47,597,498			\$ 4,226,658	\$ -	\$ -	\$ 4,226,658
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 118,630	\$ -	\$ -	\$ 118,630	\$ 118,630
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945

Propel NY - TO49 BS3

BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit

Total: \$ 180,889,981

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 13,130,226	\$ 14,522,329	\$ 10,894,543	\$ 38,547,097
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 24,398,341	\$ 15,260,216	\$ 9,757,112	\$ 49,415,669
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,639,142	\$ 10,072,806	\$ 4,979,648	\$ 19,691,596
SUBTOTAL (Costs):	\$ 44,713,308	\$ 52,386,510	\$ 30,647,343	\$ 127,747,161
CONTRACTOR MARK-UP (OH&P)	\$ 8,048,396	\$ 9,429,572	\$ 5,516,522	\$ 22,994,489
SUBTOTAL:	\$ 52,761,704	\$ 61,816,082	\$ 36,163,864	\$ 150,741,650
CONTINGENCY ON ENTIRE PROJECT	\$ 10,552,341	\$ 12,363,216	\$ 7,232,773	\$ 30,148,330
TOTAL:	\$ 63,314,045	\$ 74,179,299	\$ 43,396,637	\$ 180,889,981

Description of Work: upgrade the existing underground line ratings of the Oakwood to Syosset and Greenlawn to Syosset circuits to match that of the overhead transmission line ratings of Syosset Transition station to Syosset Substation as an Upgrade to the existing LIPA System

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,175,000	\$ 3,075,000	\$ 10,250,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	54,120	LF	\$ 30	\$ 18	\$ 12	\$ 1,623,600	\$ 974,160	\$ 649,440	\$ 3,247,200
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 410,000	\$ 1,230,000	\$ 410,000	\$ 2,050,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,432,950	\$ 955,300	\$ 2,388,250
2.2	Formwork in Trench	422,576	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 845,152	\$ 633,864	\$ 211,288	\$ 1,690,304
2.3	Trench Excavation	32,554	CY		\$ 17.5	\$ 7.5	\$ -	\$ 569,695	\$ 244,155	\$ 813,850
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,035	SF	\$ 50	\$ 25	\$ 14	\$ 101,731	\$ 49,848	\$ 28,485	\$ 180,064
2.5	Supply & Install Thermal Backfill	18,899	CY	\$ 350	\$ 245	\$ 105	\$ 6,614,488	\$ 4,630,142	\$ 1,984,346	\$ 13,228,976
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,436	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,487,233	\$ 929,520	\$ 371,808	\$ 2,788,561
2.9	Conduit 6" HDPE	162,360	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,721,016	\$ 920,581	\$ 394,535	\$ 3,036,132
2.10	Conduit 4" HDPE	54,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 290,624	\$ 227,304	\$ 97,416	\$ 615,344
2.11	Conduit 2" HDPE	54,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 103,369	\$ 170,478	\$ 73,062	\$ 346,909
2.12	Warning Tape	54,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,118	\$ 13,530	\$ 5,412	\$ 27,060
2.13	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.14	Splice Vault Excavation	6,353	CY		\$ 17.5	\$ 7.5	\$ -	\$ 111,180	\$ 47,649	\$ 158,829
2.15	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.16	Splice Vault Backfill	1,906	CY		\$ 14.0	\$ 6.0	\$ -	\$ 26,683	\$ 11,436	\$ 38,119
2.17	Jack and Bore along Route	318	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 254,400	\$ 508,800	\$ 508,800	\$ 1,272,000
2.18	HDD along Route	105	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 84,000	\$ 168,000	\$ 168,000	\$ 420,000
2.19	Air Test Ducts	270,600	LF			\$ 0.25	\$ -	\$ -	\$ 67,650	\$ 67,650
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	19,543	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 273,602	\$ 273,602	\$ 136,801	\$ 684,004
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,429	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 121,492	\$ 127,567	\$ 54,671	\$ 303,730

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	1,624	EA		\$ 400	\$ 1,200	\$ -	\$ 649,440	\$ 1,948,320	\$ 2,597,760
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	1,624	EA		\$ 10	\$ 15	\$ -	\$ 16,236	\$ 24,354	\$ 40,590
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	189	EA		\$ 400	\$ 1,200	\$ -	\$ 75,594	\$ 226,782	\$ 302,377
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 559,650	\$ 373,100	\$ -	\$ 559,650	\$ 373,100	\$ 932,750
2.26	Excess Materials Disposal to Certified Backfill	48,102	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,178,488	\$ 505,066	\$ 1,683,555
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	35	EA			\$ 4,000	\$ -	\$ -	\$ 140,000	\$ 140,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	38,907	CF		\$ 1.0	\$ 0.5	\$ -	\$ 38,907	\$ 19,454	\$ 58,361
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,130,226	\$ 14,522,329	\$ 10,894,543	\$ 38,547,097
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	170,478	FT	\$ 127	\$ 76	\$ 51	\$ 21,650,706	\$ 12,990,424	\$ 8,660,282	\$ 43,301,412
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	105	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 619,290	\$ 1,033,880	\$ 295,394	\$ 1,948,565
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	35	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 933,065	\$ 559,839	\$ 373,226	\$ 1,866,130
3.11	Fiber Optic Cable	56,826	FT	\$ 7	\$ 3	\$ 2	\$ 420,342	\$ 189,265	\$ 126,176	\$ 735,783
3.12	Ground Continuity Conductor	56,826	FT	\$ 13	\$ 8	\$ 5	\$ 740,954	\$ 427,729	\$ 285,153	\$ 1,453,836
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 24,398,341	\$ 15,260,216	\$ 9,757,112	\$ 49,415,669
BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit							\$ 40,074,167	\$ 42,313,704	\$ 25,667,695	\$ 108,055,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,039,442	\$ 1,359,628	\$ -	\$ 2,039,442	\$ 1,359,628	\$ 3,399,070
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,080,555.66		\$ -	\$ 1,080,556	\$ -	\$ 1,080,556
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,322,222.63		\$ -	\$ 4,322,223	\$ -	\$ 4,322,223
4.4	Utility PM and Project Oversight	1.0	LS		1,080,555.66		\$ -	\$ 1,080,556	\$ -	\$ 1,080,556
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,080,555.66			\$ 1,080,556	\$ -	\$ -	\$ 1,080,556
	Engineering									
4.6	Design Engineering	1.0	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4.7	LiDAR /GPR	1.0	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4.8	Geotech	11.0	Location		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 3,600,000	\$ -	\$ -	\$ 3,600,000	\$ 3,600,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 40,074,166.75			\$ 3,558,586	\$ -	\$ -	\$ 3,558,586
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,639,142	\$ 10,072,806	\$ 4,979,648	\$ 19,691,596

Propel NY - TO49 BS3

BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 359,455,633

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552
SUBTOTAL (Costs):	\$ 91,556,197	\$ 107,706,768	\$ 54,589,882	\$ 253,852,848
CONTRACTOR MARK-UP (OH&P)	\$ 16,480,115	\$ 19,387,218	\$ 9,826,179	\$ 45,693,513
SUBTOTAL:	\$ 108,036,313	\$ 127,093,987	\$ 64,416,061	\$ 299,546,360
CONTINGENCY ON ENTIRE PROJECT	\$ 21,607,263	\$ 25,418,797	\$ 12,883,212	\$ 59,909,272
TOTAL:	\$ 129,643,575	\$ 152,512,784	\$ 77,299,273	\$ 359,455,633

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	17.83	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 12,481,000	\$ 5,349,000	\$ 17,830,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	94,142	LF	\$ 30	\$ 18	\$ 12	\$ 2,824,272	\$ 1,694,563	\$ 1,129,709	\$ 5,648,544
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	17.83	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 713,200	\$ 2,139,600	\$ 713,200	\$ 3,566,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	17.83	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,492,634	\$ 1,661,756	\$ 4,154,390
2.2	Formwork in Trench	734,083	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,468,166	\$ 1,101,125	\$ 367,042	\$ 2,936,333
2.3	Trench Excavation	63,349	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,108,602	\$ 475,115	\$ 1,583,717
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,959	SF	\$ 50	\$ 25	\$ 14	\$ 197,965	\$ 97,003	\$ 55,430	\$ 350,397
2.5	Supply & Install Thermal Backfill	34,971	CY	\$ 350	\$ 245	\$ 105	\$ 12,239,818	\$ 8,567,872	\$ 3,671,945	\$ 24,479,636
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,131	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,826,220	\$ 1,766,388	\$ 706,555	\$ 5,299,163
2.9	Conduit 8" HDPE	282,427	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,801,055	\$ 1,601,362	\$ 686,298	\$ 8,088,715
2.10	Conduit 4" HDPE	94,142	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 505,545	\$ 395,398	\$ 169,456	\$ 1,070,399
2.11	Conduit 2" HDPE	94,142	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 179,812	\$ 296,549	\$ 127,092	\$ 603,453
2.12	Warning Tape	94,142	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,121	\$ 23,536	\$ 9,414	\$ 47,071
2.13	Trench Box Shoring (Vault)	62	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,120,904	\$ 1,681,356	\$ 2,802,260
2.14	Splice Vault Excavation	20,150	CY		\$ 17.5	\$ 7.5	\$ -	\$ 352,625	\$ 151,125	\$ 503,750
2.15	Splice Vault Supply & Installation	62	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,170,000	\$ 1,023,000	\$ 2,387,000	\$ 5,580,000
2.16	Splice Vault Backfill	6,045	CY		\$ 14.0	\$ 6.0	\$ -	\$ 84,630	\$ 36,270	\$ 120,900
2.17	Jack and Bore along Route	212	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 169,600	\$ 339,200	\$ 339,200	\$ 848,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	470,712	LF			\$ 0.25	\$ -	\$ -	\$ 117,678	\$ 117,678

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	37,981	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 531,739	\$ 531,739	\$ 265,869	\$ 1,329,347
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,550	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 236,117	\$ 247,923	\$ 106,253	\$ 590,293
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	141	EA		\$ 400	\$ 1,200	\$ -	\$ 56,524	\$ 169,573	\$ 226,098
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	141	EA		\$ 10	\$ 15	\$ -	\$ 1,413	\$ 2,120	\$ 3,533
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	350	EA		\$ 400	\$ 1,200	\$ -	\$ 139,884	\$ 419,651	\$ 559,535
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 973,518	\$ 649,012	\$ -	\$ 973,518	\$ 649,012	\$ 1,622,530
2.26	Excess Materials Disposal to Certified Backfill	100,690	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,466,899	\$ 1,057,242	\$ 3,524,142
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	62	EA			\$ 4,000	\$ -	\$ -	\$ 248,000	\$ 248,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	83,499	CF		\$ 1.0	\$ 0.5	\$ -	\$ 83,499	\$ 41,749	\$ 125,248
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	296,549	FT	\$ 154	\$ 92	\$ 62	\$ 45,668,478	\$ 27,401,087	\$ 18,267,391	\$ 91,336,956
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	62	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,643,028	\$ 1,150,120	\$ 492,908	\$ 3,286,056
3.11	Fiber Optic Cable	98,850	FT	\$ 7	\$ 3	\$ 2	\$ 731,190	\$ 329,228	\$ 219,485	\$ 1,279,904
3.12	Ground Continuity Conductor	98,850	FT	\$ 13	\$ 8	\$ 5	\$ 1,288,899	\$ 744,040	\$ 496,027	\$ 2,528,966
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit							\$ 82,228,347	\$ 76,499,301	\$ 43,869,648	\$ 202,597,296
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,611,068	\$ 2,407,379	\$ -	\$ 3,611,068	\$ 2,407,379	\$ 6,018,447
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		8,103,891.84		\$ -	\$ 8,103,892	\$ -	\$ 8,103,892
4.4	Utility PM and Project Oversight	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,025,972.96			\$ 2,025,973	\$ -	\$ -	\$ 2,025,973
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,129,865	\$ -	\$ -	\$ 10,129,865	\$ -	\$ 10,129,865
4.7	LiDAR /GPR	1.0	LS		\$ 364,675	\$ 243,117	\$ -	\$ 364,675	\$ 243,117	\$ 607,792
4.8	Geotech	18.0	Location		2,730.00	1,820.00	\$ -	\$ 49,140	\$ 32,760	\$ 81,900
4.9	Surveying/Staking	1	LS		\$ 850,909		\$ -	\$ 850,909	\$ -	\$ 850,909
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,025,973		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.12	Environmental-special studies/investigation	-	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 607,792	\$ -	\$ -	\$ 607,792	\$ 607,792
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 45,232	\$ -	\$ -	\$ 45,232	\$ 45,232
4.16	Legal Fees (Real estate)	1.00	LS		-	1,356.96	\$ -	\$ -	\$ 1,357	\$ 1,357
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 7,180,000	\$ -	\$ -	\$ 7,180,000	\$ 7,180,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 82,228,347			\$ 7,301,877	\$ -	\$ -	\$ 7,301,877
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 202,597	\$ -	\$ -	\$ 202,597	\$ 202,597
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552

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BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)

Total: \$ 268,731,745

BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
1. SUBMARINE CABLE	\$ 45,158,272	\$ 59,271,737	\$ 42,238,005	\$ 146,668,014
2. TRANSITION STATION	\$ 555,750	\$ 593,355	\$ 558,702	\$ 1,707,807
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 5,506,592	\$ 24,417,233	\$ 11,482,660	\$ 41,406,484
SUBTOTAL (Costs):	\$ 51,220,615	\$ 84,282,324	\$ 54,279,367	\$ 189,782,306
CONTRACTOR MARK-UP (OH&P)	\$ 9,219,711	\$ 15,170,818	\$ 9,770,286	\$ 34,160,815
SUBTOTAL:	\$ 60,440,325	\$ 99,453,142	\$ 64,049,653	\$ 223,943,121
CONTINGENCY ON ENTIRE PROJECT	\$ 12,088,065	\$ 19,890,628	\$ 12,809,931	\$ 44,788,624
TOTAL:	\$ 72,528,390	\$ 119,343,771	\$ 76,859,584	\$ 268,731,745

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA + Vessel Install	100,246	FT	\$ 375	\$ 400	\$ 250	\$ 37,592,280	\$ 40,098,432	\$ 25,061,520	\$ 102,752,232
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 5,073,819	\$ 3,382,546	\$ -	\$ 5,073,819	\$ 3,382,546	\$ 8,456,364
1.3	Submarine Cable Splicing if Required 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.5	Outdoor Termination	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.6	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.7	HDD along Route	4,062	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,499,840	\$ 12,999,680	\$ 12,999,680	\$ 32,499,200
1.8	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 33,891	\$ 22,594	\$ -	\$ 33,891	\$ 22,594	\$ 56,485
1.9	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
1.10	Trench Excavation	1,612	CY		\$ 17.5	\$ 7.5	\$ -	\$ 28,207	\$ 12,089	\$ 40,296
1.11	Supply & Install 6" Sand Bedding for direct bury conduits	101	SF	\$ 50	\$ 25	\$ 14	\$ 5,037	\$ 2,468	\$ 1,410	\$ 8,916
1.12	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
1.13	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
1.14	Native Backfill -direct bury conduits sys Trench	1,491	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,880	\$ 8,949	\$ 29,828
1.15	Conduit 15" HDPE	2,560	LF	\$ 150.0	\$ 45.0	\$ 30.0	\$ 384,000	\$ 115,200	\$ 76,800	\$ 576,000
1.16	Conduit 4" HDPE	1,280	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 6,874	\$ 5,376	\$ 2,304	\$ 14,554
1.17	Conduit 2" HDPE	0	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
1.18	Warning Tape	2,560	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 384	\$ 640	\$ 256	\$ 1,280
TOTAL - MARINE CABLE :							\$ 45,158,272	\$ 59,271,737	\$ 42,238,005	\$ 146,668,014
2. TRANSITION STATION										
2.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,094	\$ 14,063	\$ 35,156
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	1,300	LF	7.50	5.25	2.25	\$ 9,750	\$ 6,825	\$ 2,925	\$ 19,500
2.4	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.5	Splice Vault Excavation	1,593	CY		\$ 17.5	\$ 7.5	\$ -	\$ 27,876	\$ 11,947	\$ 39,822
2.6	Splice Vault Supply & Installation	4	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 280,000	\$ 90,000	\$ 210,000	\$ 580,000
2.7	Splice Vault Backfill	478	CY		\$ 14.0	\$ 6.0	\$ -	\$ 6,690	\$ 2,867	\$ 9,557
2.8	Air Test Ducts	3,840	LF			\$ 0.25	\$ -	\$ -	\$ 960	\$ 960
2.9	Restoration (incl. Paving)	19,000	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 266,000	\$ 266,000	\$ 133,000	\$ 665,000
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill	1,606	CY		\$ 24.5	\$ 10.5	\$ -	\$ 39,349	\$ 16,864	\$ 56,213
2.15	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	3,205	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,205	\$ 1,602	\$ 4,807
2.20							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 555,750	\$ 593,355	\$ 558,702	\$ 1,707,807
BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)							\$ 45,714,022	\$ 59,865,091	\$ 42,796,707	\$ 148,375,821
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		5,935,032.85		\$ -	\$ 5,935,033	\$ -	\$ 5,935,033
3.4	Utility PM and Project Oversight	1.0	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.5	Site Accommodation, Facilities, Storage	1.0	LS	1,483,758.21			\$ 1,483,758	\$ -	\$ -	\$ 1,483,758
	Engineering									
3.6	Design Engineering	1	LS		\$ 7,418,791		\$ -	\$ 7,418,791	\$ -	\$ 7,418,791
3.7	Surveying/Staking	1	LS		\$ 1,038,631		\$ -	\$ 1,038,631	\$ -	\$ 1,038,631
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
3.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,483,758		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
3.12	Warranties / LOC's	1	LS		\$ 445,127		\$ -	\$ 445,127	\$ -	\$ 445,127
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS			\$ 119,087	\$ -	\$ -	\$ 119,087	\$ 119,087
3.15	Legal Fees (Real estate)	1.00	LS		-	3,572.61	\$ -	\$ -	\$ 3,573	\$ 3,573
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Bonds	1	LS			\$ 5,360,000	\$ -	\$ -	\$ 5,360,000	\$ 5,360,000
3.18	Sales Tax on Materials	8.8%	LS	\$ 45,714,022			\$ 4,022,834	\$ -	\$ -	\$ 4,022,834
3.19	Contractor Permits	1	LS		\$ 148,376		\$ -	\$ 148,376	\$ -	\$ 148,376
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,506,592	\$ 24,417,233	\$ 11,482,660	\$ 41,406,484

Propel NY - TO49 BS3

BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)

Total: \$ 57,646,592

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 458,544	\$ 2,358,566	\$ 901,978	\$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,609,216	\$ 3,766,387	\$ 2,219,465	\$ 9,595,067
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 9,600,745	\$ 5,671,607	\$ 3,650,873	\$ 18,923,225
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,536,137	\$ 5,351,413	\$ 1,585,940	\$ 8,473,490
SUBTOTAL (Costs):	\$ 15,204,642	\$ 17,147,973	\$ 8,358,255	\$ 40,710,870
CONTRACTOR MARK-UP (OH&P)	\$ 2,736,836	\$ 3,086,635	\$ 1,504,486	\$ 7,327,957
SUBTOTAL:	\$ 17,941,478	\$ 20,234,608	\$ 9,862,741	\$ 48,038,827
CONTINGENCY ON ENTIRE PROJECT	\$ 3,588,296	\$ 4,046,922	\$ 1,972,548	\$ 9,607,765
TOTAL:	\$ 21,529,773	\$ 24,281,530	\$ 11,835,289	\$ 57,646,592

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.66	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,162,000	\$ 498,000	\$ 1,660,000
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	8,765	LF	\$ 30	\$ 18	\$ 12	\$ 262,944	\$ 157,766	\$ 105,178	\$ 525,888
1.5	Police Support	3,600.0	HR		\$ 120	\$ 27	\$ -	\$ 432,000	\$ 97,200	\$ 529,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	1.66	Mile	\$ 60,000	\$ 180,000	\$ 60,000	\$ 99,600	\$ 298,800	\$ 99,600	\$ 498,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 458,544	\$ 2,358,566	\$ 901,978	\$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y57 & Y58 -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.2	Formwork in Trench	70,118	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 140,237	\$ 105,178	\$ 35,059	\$ 280,474
2.3	Trench Excavation	5,189	CY		\$ 17.5	\$ 7.5	\$ -	\$ 90,803	\$ 38,916	\$ 129,719
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	540	CY	\$ 50	\$ 25	\$ 14	\$ 27,025	\$ 13,242	\$ 7,567	\$ 47,834
2.5	Supply & Install Thermal Backfill -conduit level	4,769	CY	\$ 350	\$ 245	\$ 105	\$ 1,668,988	\$ 1,168,292	\$ 500,697	\$ 3,337,977
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,667	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 333,355	\$ 208,347	\$ 83,339	\$ 625,040
2.8	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.9	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.10	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.11	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.12	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.13	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500
2.14	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.15	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,477	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 62,676	\$ 62,676	\$ 31,338	\$ 156,689
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,244	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,831	\$ 29,223	\$ 12,524	\$ 69,578
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,667	\$ 20,001	\$ 26,668
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	17	EA		\$ 10	\$ 15	\$ -	\$ 167	\$ 250	\$ 417
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	48	EA		\$ 400	\$ 1,200	\$ -	\$ 19,074	\$ 57,222	\$ 76,297
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.24	Excess Materials Disposal to Certified Backfill	7,455	CY		\$ 24.5	\$ 10.5	\$ -	\$ 182,652	\$ 78,279	\$ 260,932
2.25	Rock Excavation and Removal	3,979	CY		\$ 243	\$ 162	\$ -	\$ 966,939	\$ 644,626	\$ 1,611,566
2.26	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	5,969	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,969	\$ 2,984	\$ 8,953
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,609,216	\$ 3,766,387	\$ 2,219,465	\$ 9,595,067
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.7	Y57 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.8	Y57 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.9	Y57 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y57 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y57 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y57 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.1	Y58 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.2	Y58 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.3	Y58 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y58 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y58 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y58 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	4	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 106,002	\$ 74,201	\$ 31,801	\$ 212,004
3.11	Fiber Optic Cable	18,406	FT	\$ 7	\$ 3	\$ 2	\$ 136,150	\$ 61,303	\$ 40,869	\$ 238,322
3.12	Ground Continuity Conductor	18,406	FT	\$ 13	\$ 8	\$ 5	\$ 239,997	\$ 138,543	\$ 92,362	\$ 470,901
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 9,600,745	\$ 5,671,607	\$ 3,650,873	\$ 18,923,225
BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)							\$ 13,668,505	\$ 11,796,560	\$ 6,772,316	\$ 32,237,380
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 557,066	\$ 371,378	\$ -	\$ 557,066	\$ 371,378	\$ 928,444
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		1,289,495.22		\$ -	\$ 1,289,495	\$ -	\$ 1,289,495
4.4	Utility PM and Project Oversight	1.0	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.5	Site Accommodation, Facilities, Storage	1.0	LS	322,373.80			\$ 322,374	\$ -	\$ -	\$ 322,374
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,611,869	\$ -	\$ -	\$ 1,611,869	\$ -	\$ 1,611,869
4.7	LiDAR /GPR	1.0	LS		\$ 58,027	\$ 38,685	\$ -	\$ 58,027	\$ 38,685	\$ 96,712
4.8	Geotech	2.0	Location		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 225,662		\$ -	\$ 225,662	\$ -	\$ 225,662
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 322,374		\$ -	\$ 322,374	\$ -	\$ 322,374
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 96,712		\$ -	\$ 96,712	\$ -	\$ 96,712
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,140,000	\$ -	\$ -	\$ 1,140,000	\$ 1,140,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 13,668,504.91			\$ 1,213,763	\$ -	\$ -	\$ 1,213,763
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 32,237	\$ -	\$ -	\$ 32,237	\$ 32,237
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,536,137	\$ 5,351,413	\$ 1,585,940	\$ 8,473,490

BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit

Total: \$ 192,457,231

Propel NY - TO49 BS3				
	Material Supply	Labor Supply	Equip Supply	Total
BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,062,976	\$ 10,216,426	\$ 4,057,750	\$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 13,413,863	\$ 17,463,031	\$ 12,869,325	\$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 24,404,937	\$ 14,775,402	\$ 9,279,739	\$ 48,460,079
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,626,936	\$ 17,106,525	\$ 5,639,213	\$ 27,372,674
SUBTOTAL (Costs):	\$ 44,508,712	\$ 59,561,384	\$ 31,846,028	\$ 135,916,124
CONTRACTOR MARK-UP (OH&P)	\$ 8,011,568	\$ 10,721,049	\$ 5,732,285	\$ 24,464,902
SUBTOTAL:	\$ 52,520,280	\$ 70,282,433	\$ 37,578,313	\$ 160,381,026
CONTINGENCY ON ENTIRE PROJECT	\$ 10,504,056	\$ 14,056,487	\$ 7,515,663	\$ 32,076,205
TOTAL:	\$ 63,024,336	\$ 84,338,920	\$ 45,093,976	\$ 192,457,231

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm² (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

New Rochelle Station To Sprainbrook segment is 8.14 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.14	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,698,000	\$ 2,442,000	\$ 8,140,000
1.3	Flaggers	280	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 448,000	\$ 1,344,000	\$ 448,000	\$ 2,240,000
1.4	K Rail / Lane Control / Metal Plates	42,979	LF	\$ 30	\$ 18	\$ 12	\$ 1,289,376	\$ 773,626	\$ 515,750	\$ 2,578,752
1.5	Police Support	11,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,344,000	\$ 302,400	\$ 1,646,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.14	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 325,600	\$ 976,800	\$ 325,600	\$ 1,628,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,062,976	\$ 10,216,426	\$ 4,057,750	\$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.14	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,137,972	\$ 758,648	\$ 1,896,620
2.2	Formwork in Trench	318,202	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 636,403	\$ 477,302	\$ 159,101	\$ 1,272,806
2.3	Trench Excavation	16,476	CY		\$ 17.5	\$ 7.5	\$ -	\$ 288,326	\$ 123,568	\$ 411,894
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,716	SF	\$ 50	\$ 25	\$ 14	\$ 85,811	\$ 42,048	\$ 24,027	\$ 151,886
2.5	Supply & Install Thermal Backfill	15,159	CY	\$ 350	\$ 245	\$ 105	\$ 5,305,570	\$ 3,713,899	\$ 1,591,671	\$ 10,611,139
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,125	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,225,076	\$ 765,673	\$ 306,269	\$ 2,297,018
2.9	Conduit 8" HDPE	128,938	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 2,648,378	\$ 731,076	\$ 313,318	\$ 3,692,773
2.10	Conduit 4" HDPE	42,979	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 230,798	\$ 180,513	\$ 77,363	\$ 488,674
2.11	Conduit 2" HDPE	42,979	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 82,090	\$ 135,384	\$ 58,022	\$ 275,497
2.12	Warning Tape	42,979	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,447	\$ 10,745	\$ 4,298	\$ 21,490
2.13	Trench Box Shoring (Vault)	40	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 723,164	\$ 1,084,746	\$ 1,807,910
2.14	Splice Vault Excavation	7,800	CY		\$ 17.5	\$ 7.5	\$ -	\$ 136,500	\$ 58,500	\$ 195,000
2.15	Splice Vault Supply & Installation	40	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,400,000	\$ 660,000	\$ 1,540,000	\$ 3,600,000
2.16	Splice Vault Backfill	2,340	CY		\$ 14.0	\$ 6.0	\$ -	\$ 32,760	\$ 14,040	\$ 46,800
2.17	Jack and Bore along Route	310	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 248,000	\$ 496,000	\$ 496,000	\$ 1,240,000
2.18	HDD along Route	1,494	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,195,200	\$ 2,390,400	\$ 2,390,400	\$ 5,976,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	214,896	LF			\$ 0.25	\$ -	\$ -	\$ 53,724	\$ 53,724
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,317	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 242,436	\$ 242,436	\$ 121,218	\$ 606,089
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,810	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 107,653	\$ 113,036	\$ 48,444	\$ 269,132
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	61	EA		\$ 400	\$ 1,200	\$ -	\$ 24,502	\$ 73,505	\$ 98,006
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	61	EA		\$ 10	\$ 15	\$ -	\$ 613	\$ 919	\$ 1,531
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,635	\$ 181,905	\$ 242,540
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 444,444	\$ 296,296	\$ -	\$ 444,444	\$ 296,296	\$ 740,740
2.26	Excess Materials Disposal to Certified Backfill	28,517	CY		\$ 24.5	\$ 10.5	\$ -	\$ 698,654	\$ 299,423	\$ 998,078
2.27	Rock Excavation and Removal	16,184	CY		\$ 243	\$ 162	\$ -	\$ 3,932,675	\$ 2,621,783	\$ 6,554,458
2.28	Dewatering	40	EA			\$ 4,000	\$ -	\$ -	\$ 160,000	\$ 160,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	24,276	CF		\$ 1.0	\$ 0.5	\$ -	\$ 24,276	\$ 12,138	\$ 36,414
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,413,863	\$ 17,463,031	\$ 12,869,325	\$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	40	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,060,018	\$ 742,013	\$ 318,005	\$ 2,120,036
3.11	Fiber Optic Cable	45,128	FT	\$ 7	\$ 3	\$ 2	\$ 333,813	\$ 150,304	\$ 100,203	\$ 584,319
3.12	Ground Continuity Conductor	45,128	FT	\$ 13	\$ 8	\$ 5	\$ 588,426	\$ 339,680	\$ 226,453	\$ 1,154,559
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 24,404,937	\$ 14,775,402	\$ 9,279,739	\$ 48,460,079
BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit							\$ 39,881,776	\$ 42,454,859	\$ 26,206,815	\$ 108,543,450
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,059,850	\$ 1,373,233	\$ -	\$ 2,059,850	\$ 1,373,233	\$ 3,433,084
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,341,737.99		\$ -	\$ 4,341,738	\$ -	\$ 4,341,738
4.4	Utility PM and Project Oversight	1.0	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,085,434.50			\$ 1,085,434	\$ -	\$ -	\$ 1,085,434
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,427,172	\$ -	\$ -	\$ 5,427,172	\$ -	\$ 5,427,172
4.7	LiDAR /GPR	1.0	LS		\$ 195,378	\$ 130,252	\$ -	\$ 195,378	\$ 130,252	\$ 325,630
4.8	Geotech	9.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 455,882		\$ -	\$ 455,882	\$ -	\$ 455,882
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,085,434		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 325,630		\$ -	\$ 325,630	\$ -	\$ 325,630
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 164,858	\$ -	\$ -	\$ 164,858	\$ 164,858
4.16	Legal Fees (Real estate)	1.00	LS		-	4,945.74	\$ -	\$ -	\$ 4,946	\$ 4,946
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 3,840,000	\$ -	\$ -	\$ 3,840,000	\$ 3,840,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 39,881,775.62			\$ 3,541,502	\$ -	\$ -	\$ 3,541,502
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 108,543	\$ -	\$ -	\$ 108,543	\$ 108,543
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,626,936	\$ 17,106,525	\$ 5,639,213	\$ 27,372,674

Propel NY - TO49 BS3	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO49 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project (expect East Garden City station) only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	Shore Road to Sprainbrook 345kv UG line, assume Shore Road to New Rochelle is 2-circuit, New Rochelle to Sprainbrook is 1 -circuit.
36	BS3.5 EGC to Ruland 138KV, we assumed it would be a separate trench from 345kv (concrete encasement) at 8' deep.
37	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 1 circuits, 2 cable per circuit, so there are 2 passes.
38	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
39	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
40	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
41	Substation pad is based on 8" base and 6" surfacing rock.
42	The firewalls for transformers/PAR/Reactors are assumed 30' tall, if required
43	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
44	Costs for precast concrete piles (12"x80') were included in several substations by developer, there are no drawings nor geo technical report to verify if it is required and the quantities. We assumed it is required and included the costs based on developer's quantities.
45	The control panels quantities and values are provided by Sub Station Engineers.

Propel NY - TO51 AS5		
REVISION: 1		
Propel NY - TO51 AS5 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1 - New Rochelle 345kV Substation	\$ 6,440,082
Direct Labor, Material & Equipment Costs	2 - Shore Road 345 kV GIS Substation	\$ 117,294,972
Direct Labor, Material & Equipment Costs	3 - Ruland Road 345/138 kV Substation	\$ 85,451,972
Direct Labor, Material & Equipment Costs	4 - Barrett 345 kV Substation	\$ 56,131,681
Direct Labor, Material & Equipment Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 21,413,864
Direct Labor, Material & Equipment Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	\$ 24,620,968
Direct Labor, Material & Equipment Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 4,984,863
Direct Labor, Material & Equipment Costs	8 -Existing Shore Road 138 kV_ Interconnection	\$ 6,394,174
Direct Labor, Material & Equipment Costs	9 -Existing Holbrook 138 Kv_ Upgrade	\$ 1,013,645
Direct Labor, Material & Equipment Costs	10 -Existing Newbridge 138 Kv_ Upgrade	\$ 2,462,790
Direct Labor, Material & Equipment Costs	11 - Existing EGC 138 kV_ Upgrade	\$ 9,544,442
Direct Labor, Material & Equipment Costs	12 - Existing Rainey 345 kV_ Upgrade	\$ 5,218,315
Direct Labor, Material & Equipment Costs	13 - Existing EGC 345 kV_ Upgrade	\$ 64,707,842
Direct Labor, Material & Equipment Costs	14 -Existing Syosset 138 kV_ Interconnection	\$ 12,405,013
Direct Labor, Material & Equipment Costs	15 - Existing Northport 138 Kv_ Upgrade	\$ 17,691,168
Direct Labor, Material & Equipment Costs	16- Existing Oakwood 138 Kv_ Upgrade	\$ 1,170,915
Direct Labor, Material & Equipment Costs	17 -Existing Syosset 138 Kv_ Transition Station	\$ 1,250,513
SUBTOTAL (Costs):		\$ 438,197,219
CONTRACTOR MARK-UP (OH&P)		\$ 73,397,215
SUBTOTAL (AFTER MU):		\$ 511,594,433
CONTINGENCY ON ENTIRE PROJECT		\$ 102,318,887
Substation TOTAL:		\$ 613,913,320
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$ 100,737,410
Direct Labor, Material & Equipment Costs	AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 307,723,518
Direct Labor, Material & Equipment Costs	AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit	\$ 7,664,587
Direct Labor, Material & Equipment Costs	AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 118,629,508
Direct Labor, Material & Equipment Costs	AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 202,597,296
Direct Labor, Material & Equipment Costs	AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)	\$ 263,975,655
Direct Labor, Material & Equipment Costs	AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)	\$ 62,112,869
Direct Labor, Material & Equipment Costs	AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit	\$ 187,962,317
Direct Labor, Material & Equipment Costs	AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 113,508,061
Direct Labor, Material & Equipment Costs	AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit	\$ 28,607,615
SUBTOTAL (Costs):		\$ 1,393,518,836
CONTRACTOR MARK-UP (OH&P)		\$ 250,833,391
SUBTOTAL (AFTER MU):		\$ 1,644,352,227
CONTINGENCY ON ENTIRE PROJECT		\$ 328,870,445
Transmission TOTAL:		\$ 1,973,222,672
Propel NY - TO51 AS5Total Direct Cost		\$ 2,587,135,993

Propel NY - TO51 AS5 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1 - New Rochelle 345kV Substation	\$ 4,581,066
Indirect Costs	2 - Shore Road 345 kV GIS Substation	\$ 33,913,650
Indirect Costs	3 - Ruland Road 345/138 kV Substation	\$ 28,895,079
Indirect Costs	4 - Barrett 345 kV Substation	\$ 26,528,456
Indirect Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 3,217,283
Indirect Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	\$ 5,549,635
Indirect Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 1,610,496
Indirect Costs	8 -Existing Shore Road 138 kV_ Interconnection	\$ 2,026,220
Indirect Costs	9 -Existing Holbrook 138 Kv_ Upgrade	\$ 333,220
Indirect Costs	10 -Existing Newbridge 138 Kv_ Upgrade	\$ 816,867
Indirect Costs	11 - Existing EGC 138 kV_ Upgrade	\$ 2,985,944
Indirect Costs	12 - Existing Rainey 345 kV_ Upgrade	\$ 1,719,879
Indirect Costs	13 - Existing EGC 345 kV_ Upgrade	\$ 49,579,948
Indirect Costs	14 -Existing Syosset 138 kV_ Interconnection	\$ 4,132,015
Indirect Costs	15 - Existing Northport 138 Kv_ Upgrade	\$ 5,940,704
Indirect Costs	16- Existing Oakwood 138 Kv_ Upgrade	\$ 400,361
Indirect Costs	17 -Existing Syosset 138 Kv_ Transition Station	\$ 411,382
SUBTOTAL (Costs):		\$ 172,642,204
CONTRACTOR MARK-UP (OH&P)		\$ 31,075,597
SUBTOTAL (AFTER MU):		\$ 203,717,801
CONTINGENCY ON ENTIRE PROJECT		\$ 40,743,560
Substation TOTAL:		\$ 244,461,361
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$ 25,517,620
Indirect Costs	AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 78,106,163
Indirect Costs	AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit	\$ 2,465,525
Indirect Costs	AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 30,726,945
Indirect Costs	AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 51,255,552
Indirect Costs	AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)	\$ 65,279,093
Indirect Costs	AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)	\$ 15,893,013
Indirect Costs	AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit	\$ 47,280,360
Indirect Costs	AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 29,363,579
Indirect Costs	AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit	\$ 7,526,048
SUBTOTAL (Costs):		\$ 353,413,897
CONTRACTOR MARK-UP (OH&P)		\$ 63,614,501
SUBTOTAL (AFTER MU):		\$ 417,028,399
CONTINGENCY ON ENTIRE PROJECT		\$ 83,405,680
Transmission Line TOTAL:		\$ 500,434,078
Propel NY - TO51 AS5 Total Indirect Cost		\$ 744,895,440
Propel NY - TO51 AS5 Total		\$ 3,332,031,432

Propel NY - TO51 AS5

1 - New Rochelle 345kV Substation

Total: \$ 15,605,944

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
1 - New Rochelle 345kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS	\$ 303,945	\$ 347,365	\$ 217,103	\$ 868,413
3. SUBSTATION STRUCTURES	\$ 387,784	\$ 370,543	\$ 243,529	\$ 1,001,856
4. MAJOR EQUIPMENT	\$ 1,054,092	\$ 326,781	\$ 140,049	\$ 1,520,922
5. LOW VOLTAGE & CONTROL CABLE	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH	\$ 198,584	\$ 47,246	\$ 14,241	\$ 260,071
7. GROUND GRID	\$ 62,150	\$ 44,329	\$ 10,127	\$ 116,606
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 347,044	\$ 1,411,541	\$ 2,822,480	\$ 4,581,066
SUBTOTAL (Costs):	\$ 3,558,903	\$ 3,404,512	\$ 4,057,732	\$ 11,021,147
CONTRACTOR MARK-UP (OH&P)	\$ 640,603	\$ 612,812	\$ 730,392	\$ 1,983,806
SUBTOTAL:	\$ 4,199,506	\$ 4,017,324	\$ 4,788,124	\$ 13,004,954
CONTINGENCY ON ENTIRE PROJECT	\$ 839,901	\$ 803,465	\$ 957,625	\$ 2,600,991
TOTAL:	\$ 5,039,407	\$ 4,820,789	\$ 5,745,748	\$ 15,605,944

Description of Work: New, greenfield substation to be called “New Rochelle Substation,” which would be 345 kV and located near 60 Echo Avenue in the City of New Rochelle, Westchester County. The substation would allow for the transition of electric submarine transmission cables to electric underground transmission cables at a location outside of the shoreline of Long Island Sound.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1 - New Rochelle 345kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 19,980	\$ 13,320	\$ 33,300
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,698	SY	4.85	7.20	4.80	\$ 17,933	\$ 26,622	\$ 17,748	\$ 62,304
1.4	Strip and Dispose Top Soil	2,985	CY		24.50	10.50	\$ -	\$ 73,124	\$ 31,339	\$ 104,463
1.5	Site Grading- Excavation for Substation Pad	8,954	CY		9.00	6.00	\$ -	\$ 80,586	\$ 53,724	\$ 134,310
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	4,835	CY		21.00	9.00	\$ -	\$ 101,538.36	\$ 43,516.44	\$ 145,054.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,253	CY		2.40	1.60	\$ -	\$ 17,407	\$ 11,604	\$ 29,011
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,835	CY	25.00	2.40	1.60	\$ 120,879	\$ 11,604	\$ 7,736	\$ 140,220
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,954	SY	11.00	6.00	4.00	\$ 98,494	\$ 53,724	\$ 35,816	\$ 188,034
1.11	Site Surfacing - Aggregate 6" Thick	8,954	SY	16.50	4.50	3.00	\$ 147,741	\$ 40,293	\$ 26,862	\$ 214,896
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,285	LF	13.85	13.85	6.92	\$ 17,795	\$ 17,795	\$ 8,897	\$ 44,487
1.13	24' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	328,812.00	38,400.00	25,368.00	\$ 328,812	\$ 38,400	\$ 25,368	\$ 392,580
1.16	Seeding	25,302	SF	1.50	1.50	1.00	\$ 37,953	\$ 37,953	\$ 25,302	\$ 101,208
1.17	Erosion Control-Silt fence install & remove	2,307	LF	2.41	3.16	0.72	\$ 5,560	\$ 7,290	\$ 1,661	\$ 14,511
1.18	Temporary fencing	1,538	LF	7.50	5.25	2.25	\$ 11,535	\$ 8,075	\$ 3,461	\$ 23,070
1.19	Substation entrance with asphalt	1,085	SY	19.50	26.00	19.50	\$ 21,164	\$ 28,219	\$ 21,164	\$ 70,547
1.20	Guardrail	532	LF	24.00	32.00	24.00	\$ 12,768	\$ 17,024	\$ 12,768	\$ 42,560
1.21	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.22	Retaining Wall	1,140	LF	312.00	234.00	234.00	\$ 355,680	\$ 266,760	\$ 266,760	\$ 889,200

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	88	CY	703.89	804.44	502.78	\$ 62,280	\$ 71,177	\$ 44,486	\$ 177,942
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch (Double Break)	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.30	Precast Concrete Piles-12"X80'	-	EA							
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 303,945	\$ 347,365	\$ 217,103	\$ 868,413
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch (Double Break)	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	700	LF	25.00	184.94	123.29	\$ 17,500	\$ 129,457	\$ 86,304	\$ 233,261
3.22	AL. Bus fittings	1	LS	21,000.00	21,000.00	10,500.00	\$ 21,000	\$ 21,000	\$ 10,500	\$ 52,500
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 387,784	\$ 370,543	\$ 243,529	\$ 1,001,856
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	18	EA	27,144.00	5,460.00	2,340.00	\$ 488,592	\$ 98,280	\$ 42,120	\$ 628,992
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch (Double Break)	6	EA	68,900.00	21,703.50	9,301.50	\$ 413,400	\$ 130,221	\$ 55,809	\$ 599,430
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	18	EA	8,450.00	5,460.00	2,340.00	\$ 152,100	\$ 98,280	\$ 42,120	\$ 292,500
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA		11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		3,150.00	1,350.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.23	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,054,092	\$ 326,781	\$ 140,049	\$ 1,520,922
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,600	LF	5.30	1.43	0.29	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	900	LF	11.15	10.80	5.40	\$ 10,035	\$ 9,720	\$ 4,860	\$ 24,615
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	708	LF	266.50	53.04	13.26	\$ 188,549	\$ 37,526	\$ 9,381	\$ 235,456
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 198,584	\$ 47,246	\$ 14,241	\$ 260,071
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,150	LF	2.09	3.42	1.46	\$ 12,860	\$ 21,004	\$ 9,002	\$ 42,866
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		\$ 29,040	\$ 13,200	\$ -	\$ 42,240
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	\$ 20,250	\$ 10,125	\$ 1,125	\$ 31,500
TOTAL - GROUND GRID							\$ 62,150	\$ 44,329	\$ 10,127	\$ 116,606
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L		EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (Pilot): GE L90		EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.5	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.7	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.8	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
1 - New Rochelle 345kV Substation							\$ 3,211,859	\$ 1,992,971	\$ 1,235,252	\$ 6,440,082
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		112,987.80	48,423.34	\$ -	\$ 112,988	\$ 48,423	\$ 161,411
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		257,603.26		\$ -	\$ 257,603	\$ -	\$ 257,603
9.4	Utility PM and Project Oversight	1.0	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.5	Site Accommodation, Facilities, Storage	1.0	LS	64,400.82			\$ 64,401	\$ -	\$ -	\$ 64,401
	Engineering									
9.6	Design Engineering	1.00	LS		515,206.52		\$ -	\$ 515,207	\$ -	\$ 515,207
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		45,080.57		\$ -	\$ 45,081	\$ -	\$ 45,081
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		241,503.06		\$ -	\$ 241,503	\$ -	\$ 241,503
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		19,320.24		\$ -	\$ 19,320	\$ -	\$ 19,320
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,393,162.00	\$ -	\$ -	\$ 2,393,162	\$ 2,393,162
9.17	Legal Fees (Real estate)	1.00	LS		-	71,794.86	\$ -	\$ -	\$ 71,795	\$ 71,795
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
9.20	Sales Tax on Materials	8.80%	LS	3,211,858.68			\$ 282,644	\$ -	\$ -	\$ 282,644
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,440.08		\$ -	\$ 6,440	\$ -	\$ 6,440
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 347,044	\$ 1,411,541	\$ 2,822,480	\$ 4,581,066

Propel NY - TO51 AS5

2 - Shore Road 345 kV GIS Substation

Total: \$ 211,019,770

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
2 - Shore Road 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,560,984	\$ 8,254,607	\$ 5,340,843	\$ 18,156,434
2. SUBSTATION FOUNDATIONS	\$ 2,787,295	\$ 2,959,109	\$ 1,859,868	\$ 7,606,272
3. SUBSTATION STRUCTURES	\$ 1,068,782	\$ 555,441	\$ 284,470	\$ 1,908,693
4. MAJOR EQUIPMENT	\$ 68,055,971	\$ 10,067,104	\$ 6,650,052	\$ 84,773,127
5. LOW VOLTAGE & CONTROL CABLE	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH	\$ 655,081	\$ 363,964	\$ 150,412	\$ 1,169,457
7. GROUND GRID	\$ 139,293	\$ 100,038	\$ 23,138	\$ 262,469
8. CONTROL ENCLOSURE	\$ 1,476,102	\$ 1,201,368	\$ 393,734	\$ 3,071,204
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,910,757	\$ 20,027,384	\$ 5,975,509	\$ 33,913,650
Turnkey cost (HVDC, GIS)	\$ 10,734,857	\$ 6,440,914	\$ 4,293,943	\$ 21,469,714
Non-Turnkey cost	\$ 76,181,633	\$ 37,159,010	\$ 16,398,265	\$ 129,738,908
SUBTOTAL (Costs):	\$ 86,916,490	\$ 43,599,924	\$ 20,692,208	\$ 151,208,622
CONTRACTOR MARK-UP (OH&P):	\$ 14,356,785	\$ 7,075,077	\$ 3,209,324	\$ 24,641,186
SUBTOTAL:	\$ 101,273,275	\$ 50,675,001	\$ 23,901,532	\$ 175,849,808
CONTINGENCY ON ENTIRE PROJECT	\$ 20,254,655	\$ 10,135,000	\$ 4,780,306	\$ 35,169,962
TOTAL:	\$ 121,527,931	\$ 60,810,001	\$ 28,681,838	\$ 211,019,770

Description of Work: New greenfield 345 kV Shore Road Substation, to be located at 375 Shore Road, in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. The 345 kV Shore Road Substation will serve as the transition station and new connection for the existing LIPA) 138 kV Shore Road Substation. Two (2) new 345 kV underground terrestrial transmission lines with a PAR on each circuit will be converted into four (4) marine transmission lines for crossing Long Island Sound. Also, a 345 kV/138 kV power transformer in series with a 138 kV PAR will connect to the existing LIPA 138 kV substation. Lastly, three(3) 345 kV shunt reactors will be installed for compensation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2 - Shore Road 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 37,800	\$ 25,200	\$ 63,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,099	SY	4.85	7.20	4.80	\$ 15,030	\$ 22,313	\$ 14,875	\$ 52,218
1.4	Strip and Dispose Top Soil	5,647	CY		24.50	10.50	\$ -	\$ 138,343	\$ 59,290	\$ 197,633
1.5	Site Grading- Excavation for Substation Pad	169,400	CY		13.50	9.00	\$ -	\$ 2,286,900	\$ 1,524,600	\$ 3,811,500
1.6	Site Grading- Excavation for Substation Pad- Rock	8,470	CY		243.00	162.00	\$ -	\$ 2,058,210	\$ 1,372,140	\$ 3,430,350
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	91,476	CY		21.00	9.00	\$ -	\$ 1,920,996.00	\$ 823,284.00	\$ 2,744,280.00
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	137,214	CY		2.40	1.60	\$ -	\$ 329,314	\$ 219,542	\$ 548,856
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	91,476	CY	25.00	2.40	1.60	\$ 2,286,900	\$ 219,542	\$ 146,362	\$ 2,652,804
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	16,940	SY	11.00	6.00	4.00	\$ 186,340	\$ 101,640	\$ 67,760	\$ 355,740
1.12	Site Surfacing - Aggregate 6" Thick	16,940	SY	16.50	4.50	3.00	\$ 279,510	\$ 76,230	\$ 50,820	\$ 406,560
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,358	LF	13.85	13.85	6.92	\$ 18,806	\$ 18,806	\$ 9,403	\$ 47,014
1.14	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.15	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	488,434.80	76,800.00	76,104.00	\$ 488,435	\$ 76,800	\$ 76,104	\$ 641,339
1.17	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.18	Erosion Control-Silt fence install & remove	2,304	LF	2.41	3.16	0.72	\$ 5,553	\$ 7,281	\$ 1,659	\$ 14,492

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Temporary fencing	1,536	LF	7.50	5.25	2.25	\$ 11,520	\$ 8,064	\$ 3,456	\$ 23,040
1.20	Substation entrance with asphalt	282	SY	19.50	26.00	19.50	\$ 5,499	\$ 7,332	\$ 5,499	\$ 18,330
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Retaining Wall	800	LF	1,560.00	1,170.00	1,170.00	\$ 1,248,000	\$ 936,000	\$ 936,000	\$ 3,120,000
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,560,984	\$ 8,254,607	\$ 5,340,843	\$ 18,156,434
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	142	CY	703.89	804.44	502.78	\$ 100,290	\$ 114,617	\$ 71,635	\$ 286,542
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph, low	22	CY	703.89	804.44	502.78	\$ 15,570	\$ 17,794	\$ 11,121	\$ 44,486
2.4	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, GIS air terminal	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.6	345kV, GIS support-1 Ph	16	CY	703.89	804.44	502.78	\$ 11,431	\$ 13,064	\$ 8,165	\$ 32,660
2.7	345kV, GIS support-3 Ph	330	CY	703.89	804.44	502.78	\$ 232,282	\$ 265,465	\$ 165,916	\$ 663,663
2.8	345kV, GIS Cable sealing end	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.9	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.11	345kV, Shunt Reactor with oil containment-150MVAR	400	CY	703.89	804.44	502.78	\$ 281,554	\$ 321,776	\$ 201,110	\$ 804,440
2.12	345kV, Shunt Reactor with oil containment-100MVAR	150	CY	703.89	804.44	502.78	\$ 105,583	\$ 120,666	\$ 75,416	\$ 301,665
2.13	345kV, Phase Angle Regulator with oil containment	706	CY	703.89	804.44	502.78	\$ 496,943	\$ 567,935	\$ 354,959	\$ 1,419,837
2.14	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Circuit Breaker (GIS), outdoor rated	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.16	345/138 Kv, Control Enclosure-BLDG with generator pad	213	CY	703.89	804.44	502.78	\$ 149,928	\$ 171,346	\$ 107,091	\$ 428,364
2.17	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.18	138kV, Bus support-3 Ph, low	16	CY	703.89	804.44	502.78	\$ 11,431	\$ 13,064	\$ 8,165	\$ 32,660
2.19	138kV, Bus support-1 Ph, low	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.20	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.22	Firewall Foundation	467	CY	703.89	804.44	502.78	\$ 328,911	\$ 375,899	\$ 234,937	\$ 939,747
2.23	Precast Firewall for transformer, PARs, reactors	16,680	SF	25.00	15.00	10.00	\$ 417,000	\$ 250,200	\$ 166,800	\$ 834,000
2.24	Precast Concrete Piles-12"X80'	-	EA	4,800.00	3,600.00	3,600.00	\$ -	\$ -	\$ -	\$ -
2.25	Local Control Cabinet foundation	7	CY	703.89	804.44	502.78	\$ 4,693	\$ 5,363	\$ 3,352	\$ 13,407
TOTAL - 345KV FOUNDATION							\$ 2,787,295	\$ 2,959,109	\$ 1,859,868	\$ 7,606,272
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	8	EA	23,400.00	14,040.00	9,360.00	\$ 187,200	\$ 112,320	\$ 74,880	\$ 374,400
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph, low	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.4	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.5	345kV, GIS air terminal	24	EA	8,346.00	5,758.74	3,839.16				\$ -
3.6	345kV, GIS support-1 Ph	4	EA	8,346.00	5,758.74	3,839.16				\$ -
3.7	345kV, GIS support-3 Ph	25	EA	4,810.00	2,886.00	1,924.00				\$ -
3.8	345kV, GIS Cable sealing end	6	EA	8,346.00	5,758.74	3,839.16				\$ -
3.9	345kV, CCVT	0	EA							\$ -
3.10	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.11	138kV, Bus support-1 Ph, low	3	EA	2,782.00	1,919.84	1,279.89	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.12	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.13	138kV, Cable sealing end	1	EA	4,066.40	1,443.00	962.00	\$ 4,066	\$ 1,443	\$ 962	\$ 6,471
3.16	AL. Bus Tubing, 5" SCH 80	300	LF	25.00	184.94	123.29	\$ 7,500	\$ 55,481	\$ 36,988	\$ 99,969
3.17	AL. Bus fittings	1	LS	9,000.00	9,000.00	4,500.00	\$ 9,000	\$ 9,000	\$ 4,500	\$ 22,500
3.18	Steel grating and support beams-transformer moat	302,960	LB	2.73	1.17	0.50	\$ 827,631	\$ 354,160	\$ 151,783	\$ 1,333,575
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,068,782	\$ 555,441	\$ 284,470	\$ 1,908,693
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	24	EA							
4.2	345kV, GIS- Cable sealing end	6	EA							
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28		\$ -	\$ -	\$ -
4.4	345/138KV, Power Transformer	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.5	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.6	345kV, Shunt Reactor -150MVAR	2	EA	2,901,774.00	3,520.00	880.00	\$ 5,803,548	\$ 7,040	\$ 1,760	\$ 5,812,348
4.7	345kV, Shunt Reactor -100MVAR	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.8	Transport & Testing- Shunt Reactor	3	EA		314,399.80	205,933.20	\$ -	\$ 943,199	\$ 617,800	\$ 1,560,999
4.9	345kV, Phase Angle Regulator	2	EA	16,120,693.00	3,520.00	880.00	\$ 32,241,386	\$ 7,040	\$ 1,760	\$ 32,250,186
4.10	Transport & Testing- Phase Angle Regulating Transformer, 345kV	2	EA		615,400.00	406,600.00	\$ -	\$ 1,230,800	\$ 813,200	\$ 2,044,000
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	8	EA	1,341,857.13	805,114.28	536,742.85	\$ 10,734,857	\$ 6,440,914	\$ 4,293,943	\$ 21,469,714
4.15	345kV, GIS Cable sealing end	18	EA				\$ -	\$ -	\$ -	\$ -
4.16	138kV, Phase Angle Regulator	1	EA	11,902,178.00	3,520.00	880.00	\$ 11,902,178	\$ 3,520	\$ 880	\$ 11,906,578
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.18	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300
4.20	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.21	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.22	345kV Gas-Insulated Bus Conductor	3,393	LF	550.00	275.00	82.50				\$ -
4.23	345kV Gas-Insulated Bus Conductor-elbow	90	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 68,055,971	\$ 10,067,104	\$ 6,650,052	\$ 84,773,127
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	49,500	LF	5.30	1.43	0.29	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,100	LF	11.15	10.80	5.40	\$ 90,315	\$ 87,480	\$ 43,740	\$ 221,535
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,125	LF	266.50	53.04	13.26	\$ 299,813	\$ 59,670	\$ 14,918	\$ 374,400
6.7										
6.10	138kV UG- Conduit	367	LF	81.00	107.00	57.00	\$ 29,700	\$ 39,233	\$ 20,900	\$ 89,833
6.11	138kV UG- Cable	1,100	LF	156.00	94.00	62.00	\$ 171,600	\$ 103,400	\$ 68,200	\$ 343,200
6.12	138kV UG- Termination	6	EA	9,360.00	11,700.00		\$ 56,160	\$ 70,200	\$ -	\$ 126,360
6.11	Fiber Optic Cable	367	LF	7.40	3.33	2.22	\$ 2,712	\$ 1,221	\$ 814	\$ 4,748
6.12	Ground Continuity Conductor	367	LF	13.04	7.53	5.02	\$ 4,781	\$ 2,760	\$ 1,840	\$ 9,381
TOTAL - CONDUIT & CABLE TRENCH							\$ 655,081	\$ 363,964	\$ 150,412	\$ 1,169,457
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	14,040.0	LF	2.09	3.42	1.46	\$ 29,358	\$ 47,951	\$ 20,550	\$ 97,859
7.2	Caweld, DSA, 4/0 , T, CROSS	384.0	EA	165.00	75.00		\$ 63,360	\$ 28,800	\$ -	\$ 92,160
7.3	Ground Rod, 3/4" x 15'	345.0	EA	135.00	67.50	7.50	\$ 46,575	\$ 23,288	\$ 2,588	\$ 72,450
TOTAL - GROUND GRID							\$ 139,293	\$ 100,038	\$ 23,138	\$ 262,469
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	318,133.59	222,693.51	95,440.08	\$ 318,134	\$ 222,694	\$ 95,440	\$ 636,267
8.2	Primary Line Relays (87L): SEL-411L	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.3	Backup Line Relays (87L): GE L90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.4	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,476,102	\$ 1,201,368	\$ 393,734	\$ 3,071,204
2 - Shore Road 345 kV GIS Substation							\$ 79,005,733	\$ 23,572,540	\$ 14,716,699	\$ 117,294,972
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		964,403.38	413,315.73	\$ -	\$ 964,403	\$ 413,316	\$ 1,377,719
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		958,252.58		\$ -	\$ 958,253	\$ -	\$ 958,253
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,833,010.33		\$ -	\$ 3,833,010	\$ -	\$ 3,833,010
9.4	Utility PM and Project Oversight	1.0	LS		958,252.58		\$ -	\$ 958,253	\$ -	\$ 958,253
9.5	Site Accommodation, Facilities, Storage	1.0	LS	958,252.58			\$ 958,253	\$ -	\$ -	\$ 958,253
	Engineering									
9.6	Design Engineering	1.00	LS		7,666,020.67		\$ -	\$ 7,666,021	\$ -	\$ 7,666,021
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		670,776.81		\$ -	\$ 670,777	\$ -	\$ 670,777
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,593,447.19		\$ -	\$ 3,593,447	\$ -	\$ 3,593,447
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		958,252.58		\$ -	\$ 958,253	\$ -	\$ 958,253
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		287,475.77		\$ -	\$ 287,476	\$ -	\$ 287,476
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,294,265.00	\$ -	\$ -	\$ 1,294,265	\$ 1,294,265
9.17	Legal Fees (Real estate)	1.00	LS		-	38,827.95	\$ -	\$ -	\$ 38,828	\$ 38,828
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 4,220,000	\$ -	\$ -	\$ 4,220,000	\$ 4,220,000
9.20	Sales Tax on Materials	8.80%	LS	79,005,733.00			\$ 6,952,505	\$ -	\$ -	\$ 6,952,505
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		117,294.97		\$ -	\$ 117,295	\$ -	\$ 117,295
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,910,757	\$ 20,027,384	\$ 5,975,509	\$ 33,913,650

Propel NY - TO51 AS5

3 - Ruland Road 345/138 kV Substation

Total: \$ 161,915,424

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS	\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES	\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960
4. MAJOR EQUIPMENT	\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH	\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID	\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE	\$ 1,433,684	\$ 1,171,676	\$ 381,008	\$ 2,986,368
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,327,783	\$ 17,796,366	\$ 4,770,929	\$ 28,895,079
SUBTOTAL (Costs):	\$ 68,523,955	\$ 33,122,286	\$ 12,700,810	\$ 114,347,051
CONTRACTOR MARK-UP (OH&P)	\$ 12,334,312	\$ 5,962,012	\$ 2,286,146	\$ 20,582,469
SUBTOTAL:	\$ 80,858,267	\$ 39,084,298	\$ 14,986,956	\$ 134,929,520
CONTINGENCY ON ENTIRE PROJECT	\$ 16,171,653	\$ 7,816,860	\$ 2,997,391	\$ 26,985,904
TOTAL:	\$ 97,029,920	\$ 46,901,157	\$ 17,984,347	\$ 161,915,424

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, to be located on Ruland Road in the Hamlet of Melville, Town of Huntington, Suffolk County. The New substation will consist of a 138 kV air insulated switchgear (“AIS”) six (6) position ring bus substation and a 345 kV AIS six (6) position ring bus substation interconnected by three (3) 345 kV/138 kV power transformers.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3 - Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.3	ACRE	-	10,800.00	7,200.00	\$ -	\$ 68,040	\$ 45,360	\$ 113,400
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,535	SY	4.85	7.20	4.80	\$ 21,995	\$ 32,653	\$ 21,769	\$ 76,417
1.4	Strip and Dispose Top Soil	10,164	CY		24.50	10.50	\$ -	\$ 249,018	\$ 106,722	\$ 355,740
1.5	Site Grading- Excavation for Substation Pad	30,492	CY		9.00	6.00	\$ -	\$ 274,428	\$ 182,952	\$ 457,380
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	16,466	CY		21.00	9.00	\$ -	\$ 345,779.28	\$ 148,191.12	\$ 493,970.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	24,699	CY		2.40	1.60	\$ -	\$ 59,276	\$ 39,518	\$ 98,794
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	16,466	CY	25.00	2.40	1.60	\$ 411,642	\$ 39,518	\$ 26,345	\$ 477,505
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	30,492	SY	11.00	6.00	4.00	\$ 335,412	\$ 182,952	\$ 121,968	\$ 640,332
1.11	Site Surfacing - Aggregate 6" Thick	30,492	SY	16.50	4.50	3.00	\$ 503,118	\$ 137,214	\$ 91,476	\$ 731,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,005	LF	13.85	13.85	6.92	\$ 27,765	\$ 27,765	\$ 13,883	\$ 69,413
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	17,200	SF	1.50	1.50	1.00	\$ 25,800	\$ 25,800	\$ 17,200	\$ 68,800
1.17	Erosion Control-Silt fence install & remove	3,393	LF	2.41	3.16	0.72	\$ 8,177	\$ 10,722	\$ 2,443	\$ 21,342
1.18	Temporary fencing	2,262	LF	7.50	5.25	2.25	\$ 16,965	\$ 11,876	\$ 5,090	\$ 33,930
1.19	Substation entrance with asphalt	135	SY	19.50	26.00	19.50	\$ 2,637	\$ 3,516	\$ 2,637	\$ 8,789
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088
2.2	345kV, A Frame 70'	587	CY	703.89	804.44	502.78	\$ 412,871	\$ 471,852	\$ 294,908	\$ 1,179,631
2.3	345kV, Bus support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	293	CY	703.89	804.44	502.78	\$ 206,266	\$ 235,733	\$ 147,333	\$ 589,333
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.11	345kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.12	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	27	CY	703.89	804.44	502.78	\$ 18,770	\$ 21,452	\$ 13,407	\$ 53,629
2.22	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.23	138kV, Bus support-1 Ph, low	110	CY	703.89	804.44	502.78	\$ 77,160	\$ 88,183	\$ 55,114	\$ 220,457
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.26	138kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.27	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.28	Firewall Foundation	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.29	Precast Firewall for transformer, PARs, reactors	1,200	SF	25.00	15.00	10.00	\$ 30,000	\$ 18,000	\$ 12,000	\$ 60,000
2.30	Precast Concrete Piles-12"X80'	212	EA	18,000.00	3,200.00	2,800.00	\$ 3,816,000	\$ 678,400	\$ 593,600	\$ 5,088,000
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - 345KV FOUNDATION							\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'	4	EA	48,100.00	28,860.00	19,240.00	\$ 192,400	\$ 115,440	\$ 76,960	\$ 384,800
3.3	345kV, Bus support-3 Ph	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	37	EA	4,810.00	2,886.00	1,924.00	\$ 177,970	\$ 106,782	\$ 71,188	\$ 355,940
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.11	345kV, CCVT	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.12	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	27	EA	2,782.00	1,919.84	1,279.89	\$ 75,114	\$ 51,836	\$ 34,557	\$ 161,507
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.17	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.18	138kV, A Frame 50'	3	EA	33,000.00	19,800.00	13,200.00	\$ 99,000	\$ 59,400	\$ 39,600	\$ 198,000
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	2,850	LF	25.00	184.94	123.29	\$ 71,250	\$ 527,073	\$ 351,382	\$ 949,706
3.22	AL. Bus fittings	1	LS	85,500.00	85,500.00	42,750.00	\$ 85,500	\$ 85,500	\$ 42,750	\$ 213,750
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.4	345kV, CCVT	18	EA	16,900.00	15,941.99	6,832.28	\$ 304,200	\$ 286,956	\$ 122,981	\$ 714,137
4.5	345kV, Disconnect Switch	2	EA	68,900.00	21,703.50	9,301.50	\$ 137,800	\$ 43,407	\$ 18,603	\$ 199,810
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.7	Transport & Testing- Transformer	3	EA		834,400.00	357,600.00	\$ -	\$ 2,503,200	\$ 1,072,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	2	EA	2,901,774.00	3,520.00	880.00	\$ 5,803,548	\$ 7,040	\$ 1,760	\$ 5,812,348
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	\$ -	\$ 769,300	\$ 329,700	\$ 1,099,000
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	16,086,712.00	3,520.00	880.00	\$ 16,086,712	\$ 3,520	\$ 880	\$ 16,091,112
4.12	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.13	345kV, Circuit Breaker (PASS)	8	EA	980,000.00	57,239.00	24,531.00	\$ 7,840,000	\$ 457,912	\$ 196,248	\$ 8,494,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	\$ 50,700	\$ 32,760	\$ 14,040	\$ 97,500
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker (PASS)	6	EA	510,000.00	13,559.00	5,811.00	\$ 3,060,000	\$ 81,354	\$ 34,866	\$ 3,176,220
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.22	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	\$ 180,000	\$ 143,462	\$ 61,484	\$ 384,945
4.23	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	114,000	LF	5.30	1.43	0.29	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	22,500	LF	11.15	10.80	5.40	\$ 250,875	\$ 243,000	\$ 121,500	\$ 615,375
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	601	LF	266.50	53.04	13.26	\$ 160,167	\$ 31,877	\$ 7,969	\$ 200,013
6.7										
6.8	138kV UG- Conduit	1,775	LF	81.00	107.00	57.00	\$ 143,775	\$ 189,925	\$ 101,175	\$ 434,875
6.9	138kV UG- Cable	6,325	LF	156.00	94.00	62.00	\$ 986,700	\$ 594,550	\$ 392,150	\$ 1,973,400
6.10	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.11	Fiber Optic Cable	1,775	LF	7.40	3.33	2.22	\$ 13,130	\$ 5,912	\$ 3,941	\$ 22,983
6.12	Ground Continuity Conductor	1,775	LF	13.04	7.53	5.02	\$ 23,144	\$ 13,360	\$ 8,907	\$ 45,412
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,334	LF	2.09	3.42	1.46	\$ 61,337	\$ 100,184	\$ 42,936	\$ 204,458
7.2	Caweld, DSA, 4/0 , T, CROSS	780	EA	165.00	75.00		\$ 128,700	\$ 58,500	\$ -	\$ 187,200
7.3	Ground Rod, 3/4" x 15'	722	EA	135.00	67.50	7.50	\$ 97,470	\$ 48,735	\$ 5,415	\$ 151,620
TOTAL - GROUND GRID							\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.5	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,433,684	\$ 1,171,676	\$ 381,008	\$ 2,986,368
3 - Ruland Road 345/138 kV Substation							\$ 62,196,172	\$ 15,325,920	\$ 7,929,881	\$ 85,451,972
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		813,953.01	348,837.01	\$ -	\$ 813,953	\$ 348,837	\$ 1,162,790
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,418,078.90		\$ -	\$ 3,418,079	\$ -	\$ 3,418,079
9.4	Utility PM and Project Oversight	1.0	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.5	Site Accommodation, Facilities, Storage	1.0	LS	854,519.72			\$ 854,520	\$ -	\$ -	\$ 854,520
	Engineering									
9.6	Design Engineering	1.00	LS		6,836,157.79		\$ -	\$ 6,836,158	\$ -	\$ 6,836,158
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		598,163.81		\$ -	\$ 598,164	\$ -	\$ 598,164
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,204,448.97		\$ -	\$ 3,204,449	\$ -	\$ 3,204,449
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		256,355.92		\$ -	\$ 256,356	\$ -	\$ 256,356
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,220,000	\$ -	\$ -	\$ 3,220,000	\$ 3,220,000
9.20	Sales Tax on Materials	8.80%	LS	62,196,172.06			\$ 5,473,263	\$ -	\$ -	\$ 5,473,263
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		85,451.97		\$ -	\$ 85,452	\$ -	\$ 85,452
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,327,783	\$ 17,796,366	\$ 4,770,929	\$ 28,895,079

Propel NY - TO51 AS5

4 - Barrett 345 kV Substation

Total: \$ 117,046,754

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
4 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 906,787	\$ 966,999	\$ 543,829	\$ 2,417,615
2. SUBSTATION FOUNDATIONS	\$ 4,579,333	\$ 2,166,036	\$ 1,453,545	\$ 8,198,913
3. SUBSTATION STRUCTURES	\$ 266,997	\$ 258,797	\$ 169,476	\$ 695,270
4. MAJOR EQUIPMENT	\$ 36,428,028	\$ 3,794,774	\$ 1,623,189	\$ 41,845,990
5. LOW VOLTAGE & CONTROL CABLE	\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
6. CONDUIT & CABLE TRENCH	\$ 190,409	\$ 86,807	\$ 37,092	\$ 314,308
7. GROUND GRID	\$ 121,722	\$ 87,561	\$ 20,297	\$ 229,580
8. CONTROL ENCLOSURE	\$ 1,050,255	\$ 873,416	\$ 295,839	\$ 2,219,510
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,407,133	\$ 15,072,359	\$ 7,048,965	\$ 26,528,456
SUBTOTAL (Costs):	\$ 48,109,587	\$ 23,349,723	\$ 11,200,828	\$ 82,660,137
CONTRACTOR MARK-UP (OH&P)	\$ 8,659,726	\$ 4,202,950	\$ 2,016,149	\$ 14,878,825
SUBTOTAL:	\$ 56,769,313	\$ 27,552,673	\$ 13,216,977	\$ 97,538,962
CONTINGENCY ON ENTIRE PROJECT	\$ 11,353,863	\$ 5,510,535	\$ 2,643,395	\$ 19,507,792
TOTAL:	\$ 68,123,175	\$ 33,063,207	\$ 15,860,372	\$ 117,046,754

Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of Hempstead, Nassau County. The New 345 kV Barrett Substation will serve as the main Point of Interconnection (“POI”)between the generation and transmission operator. The New substation will step up the 138 kV POI voltage to 345 kV, and a new 345 kV underground line will be connected										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 43,200	\$ 28,800	\$ 72,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,053	SY	4.85	7.20	4.80	\$ 14,807	\$ 21,982	\$ 14,654	\$ 51,443
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$ -	\$ 158,107	\$ 67,760	\$ 225,867
1.5	Site Grading- Excavation for Substation Pad	19,360	CY		9.00	6.00	\$ -	\$ 174,240	\$ 116,160	\$ 290,400
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	10,454	CY		21.00	9.00	\$ -	\$ 219,542.40	\$ 94,089.60	\$ 313,632.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	15,682	CY		2.40	1.60	\$ -	\$ 37,636	\$ 25,091	\$ 62,726
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	10,454	CY	25.00	2.40	1.60	\$ 261,360	\$ 25,091	\$ 16,727	\$ 303,178
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	19,360	SY	11.00	6.00	4.00	\$ 212,960	\$ 116,160	\$ 77,440	\$ 406,560
1.11	Site Surfacing - Aggregate 6" Thick	19,360	SY	16.50	4.50	3.00	\$ 319,440	\$ 87,120	\$ 58,080	\$ 464,640
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,286	LF	13.85	13.85	6.92	\$ 17,809	\$ 17,809	\$ 8,904	\$ 44,521
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH AND INLET	2	EA	11,160.00	9,600.00	6,342.00	\$ 22,320	\$ 19,200	\$ 12,684	\$ 54,204
1.16	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.17	Erosion Control-Silt fence install & remove	2,481	LF	2.41	3.16	0.72	\$ 5,979	\$ 7,840	\$ 1,786	\$ 15,605
1.18	Temporary fencing	1,654	LF	7.50	5.25	2.25	\$ 12,405	\$ 8,684	\$ 3,722	\$ 24,810
1.19	Substation entrance with asphalt	490	SY	19.50	26.00	19.50	\$ 9,555	\$ 12,740	\$ 9,555	\$ 31,850
1.20	Concrete curb	160	LF	26.00	27.30	11.70	\$ 4,160	\$ 4,368	\$ 1,872	\$ 10,400
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 906,787	\$ 966,999	\$ 543,829	\$ 2,417,615
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast foundation	71	CY	703.89	804.44	502.78	\$ 50,145	\$ 57,308	\$ 35,818	\$ 143,271
2.2	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.3	345kV, Bus support-1 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.4	345kV, Cable sealing end	18	CY	703.89	804.44	502.78	\$ 12,797	\$ 14,625	\$ 9,140	\$ 36,562
2.5	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.6	345/138KV, Power Transformer with oil containment	550	CY	703.89	804.44	502.78	\$ 387,137	\$ 442,442	\$ 276,526	\$ 1,106,105
2.7	345kV, Shunt Reactor with oil containment	275	CY	703.89	804.44	502.78	\$ 193,568	\$ 221,221	\$ 138,263	\$ 553,053
2.8	345kV, Circuit Breaker (PASS)	60	CY	703.89	804.44	502.78	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
2.9	345/138 Kv, Control Enclosure-BLDG with generator pad	138	CY	703.89	804.44	502.78	\$ 97,136	\$ 111,013	\$ 69,383	\$ 277,532
2.10	138kV, Phase Angle Regulator	294	CY	703.89	804.44	502.78	\$ 206,942	\$ 236,505	\$ 147,816	\$ 591,263
2.11	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.12	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.13	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.14	Precast Firewall for transformer	5,100	SF	25.00	15.00	10.00	\$ 127,500	\$ 76,500	\$ 51,000	\$ 255,000
2.15	Precast Concrete Piles-12"X80'	158	EA	18,000.00	3,200.00	2,800.00	\$ 2,844,000	\$ 505,600	\$ 442,400	\$ 3,792,000
2.16	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 4,579,333	\$ 2,166,036	\$ 1,453,545	\$ 8,198,913
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast- 90'	4	EA	23,400.00	14,040.00	9,360.00	\$ 93,600	\$ 56,160	\$ 37,440	\$ 187,200
3.2	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.3	345kV, Bus support-1 Ph	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.4	345kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.5	345kV, CCVT	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.6	138kV, Disconnect Switch	2	EA	12,251.20	3,928.86	2,619.24	\$ 24,502	\$ 7,858	\$ 5,238	\$ 37,599
3.7	138kV, Cable sealing end	2	EA	4,066.40	1,443.00	962.00	\$ 8,133	\$ 2,886	\$ 1,924	\$ 12,943
3.8	AL. Bus Tubing, 5" SCH 80	611	LF	25.00	184.94	123.29	\$ 15,275	\$ 112,997	\$ 75,331	\$ 203,604
3.9	AL. Bus fittings	1	LS	18,330.00	18,330.00	9,165.00	\$ 18,330	\$ 18,330	\$ 9,165	\$ 45,825
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 266,997	\$ 258,797	\$ 169,476	\$ 695,270
4. MAJOR EQUIPMENT										
4.1	345/138kV, Power Transformer	2	EA	4,420,000.00	3,520.00	880.00	\$ 8,840,000	\$ 7,040	\$ 1,760	\$ 8,848,800
4.2	Transport & Testing- Transformer	2	EA		834,400.00	357,600.00	\$ -	\$ 1,668,800	\$ 715,200	\$ 2,384,000
4.3	Shunt Reactor, 345kV	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264
4.4	Transport & Testing- Shunt Reactor	1	EA		323,400.00	138,600.00	\$ -	\$ 323,400	\$ 138,600	\$ 462,000
4.5	345kV Circuit Breakers, PASS	3	EA	980,000.00	57,239.00	24,531.00	\$ 2,940,000	\$ 171,717	\$ 73,593	\$ 3,185,310
4.6	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.7	345kV, CCVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.8	345kV, Surge arrester	3	EA	8,450.00	4,200.00	1,800.00	\$ 25,350	\$ 12,600	\$ 5,400	\$ 43,350
4.9	Phase Angle Regulating Transformer, 138kV	2	EA	10,713,172.00	3,520.00	880.00	\$ 21,426,344	\$ 7,040	\$ 1,760	\$ 21,435,144
4.10	Transport & Testing- Phase Angle Regulating Transformer, 138kV	2	EA		701,400.00	300,600.00	\$ -	\$ 1,402,800	\$ 601,200	\$ 2,004,000
4.11	138kV, Cable sealing end	6	EA	11,600.00	1,050.00	450.00	\$ 69,600	\$ 6,300	\$ 2,700	\$ 78,600
4.12	138kV, Disconnect Switch- 3 Phase	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.13	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.14	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 36,428,028	\$ 3,794,774	\$ 1,623,189	\$ 41,845,990
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	30,000	LF	5.30	1.43	0.29	\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,700	LF	11.15	10.80	5.40	\$ 63,555	\$ 61,560	\$ 30,780	\$ 155,895
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	476	LF	266.50	53.04	13.26	\$ 126,854	\$ 25,247	\$ 6,312	\$ 158,413

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.7							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 190,409	\$ 86,807	\$ 37,092	\$ 314,308
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,330	LF	2.09	3.42	1.46	\$ 25,782	\$ 42,111	\$ 18,047	\$ 85,940
7.2	Caweld, DSA, 4/0 , T, CROSS	336	EA	165.00	75.00		\$ 55,440	\$ 25,200	\$ -	\$ 80,640
7.3	Ground Rod, 3/4" x 15'	300	EA	135.00	67.50	7.50	\$ 40,500	\$ 20,250	\$ 2,250	\$ 63,000
TOTAL - GROUND GRID							\$ 121,722	\$ 87,561	\$ 20,297	\$ 229,580
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	190,880.15	133,616.11	57,264.05	\$ 190,880	\$ 133,616	\$ 57,264	\$ 381,760
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,050,255	\$ 873,416	\$ 295,839	\$ 2,219,510
4 - Barrett 345 kV Substation							\$ 43,702,454	\$ 8,277,364	\$ 4,151,863	\$ 56,131,681
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		435,022.94	186,438.40	\$ -	\$ 435,023	\$ 186,438	\$ 621,461
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,245,267.24		\$ -	\$ 2,245,267	\$ -	\$ 2,245,267
9.4	Utility PM and Project Oversight	1.0	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.5	Site Accommodation, Facilities, Storage	1.0	LS	561,316.81			\$ 561,317	\$ -	\$ -	\$ 561,317
	Engineering									
9.6	Design Engineering	1.00	LS		4,490,534.48		\$ -	\$ 4,490,534	\$ -	\$ 4,490,534
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		392,921.77		\$ -	\$ 392,922	\$ -	\$ 392,922
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,104,938.04		\$ -	\$ 2,104,938	\$ -	\$ 2,104,938
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.13	Environmental-special studies/investigation	1.00	LS		3,475,000.00		\$ -	\$ 3,475,000	\$ -	\$ 3,475,000
9.14	Warranties / LOC's	1.00	LS		168,395.04		\$ -	\$ 168,395	\$ -	\$ 168,395
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			4,401,385.00	\$ -	\$ -	\$ 4,401,385	\$ 4,401,385
9.17	Legal Fees (Real estate)	1.00	LS		-	132,041.55	\$ -	\$ -	\$ 132,042	\$ 132,042
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,320,000	\$ -	\$ -	\$ 2,320,000	\$ 2,320,000
9.20	Sales Tax on Materials	8.80%	LS	43,702,454.27			\$ 3,845,816	\$ -	\$ -	\$ 3,845,816
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		56,131.68		\$ -	\$ 56,132	\$ -	\$ 56,132
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,407,133	\$ 15,072,359	\$ 7,048,965	\$ 26,528,456

Propel NY - TO51 AS5

5 - Existing 345 kV Tremont Substation GIS Interconnection

Total: \$ 32,771,373

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Existing 345 kV Tremont Substation_GIS_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS	\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH	\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID	\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE	\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283
Turnkey cost (HVDC, GIS)	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
Non-Turnkey cost	\$ 4,776,525	\$ 3,457,247	\$ 1,770,071	\$ 10,003,843
SUBTOTAL (Costs):	\$ 12,090,177	\$ 7,845,439	\$ 4,695,532	\$ 24,631,147
CONTRACTOR MARK-UP (OH&P):	\$ 1,298,594	\$ 885,596	\$ 494,140	\$ 2,678,330
SUBTOTAL:	\$ 13,388,771	\$ 8,731,035	\$ 5,189,672	\$ 27,309,477
CONTINGENCY ON ENTIRE PROJECT	\$ 2,677,754	\$ 1,746,207	\$ 1,037,934	\$ 5,461,895
TOTAL:	\$ 16,066,525	\$ 10,477,241	\$ 6,227,606	\$ 32,771,373

Description of Work: The existing Consolidated Edison Company of New York, Inc. (“Con Edison”) Tremont Substation, located in the Borough of the Bronx, New York City, Bronx County. Tremont Substation is an existing 345 kV AIS substation fed by a single underground 345 kV Line, X-28, which is a Con Edison transmission circuit. The X-28 circuit is connected to a common rigid bus that feeds two (2) 345 kV / 138 kV transformers in parallel. The Solution consists of the termination of a new 345 kV circuit, which requires installing a new 345 kV GIS six-position ring bus within the existing fence-line of the substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Existing 345 kV Tremont Substation_GIS_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	825	LF	2.41	3.16	0.72	\$ 1,988	\$ 2,607	\$ 594	\$ 5,189
1.18	Temporary fencing	300	LF	7.50	5.25	2.25	\$ 2,250	\$ 1,575	\$ 675	\$ 4,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.8	345kV, GIS to air bushing	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.9	345kV, GIS support-1 Ph	45	CY	703.89	804.44	502.78	\$ 31,436	\$ 35,926	\$ 22,454	\$ 89,816
2.10	345kV, GIS support-3 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.11	345kV, GIS Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	125	CY	703.89	804.44	502.78	\$ 87,986	\$ 100,555	\$ 62,847	\$ 251,388
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	93	EA	18,000.00	3,200.00	2,800.00	\$ 1,674,000	\$ 297,600	\$ 260,400	\$ 2,232,000
2.33	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	12	EA	8,346.00	5,758.74	3,839.16				
3.8	345kV, GIS to air bushing	9	EA	4,810.00	2,886.00	1,924.00				
3.9	345kV, GIS support-1 Ph	11	EA	4,810.00	2,886.00	1,924.00				
3.10	345kV, GIS support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16				
3.11	345kV, GIS Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16				
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.4	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.5	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.6	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,218,942.00	731,365.20	487,576.80	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
4.13	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.15	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.16	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	23,400	LF	5.30	1.43	0.29	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6" , SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4" , SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3" , SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2" , SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1" , SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,452	LF	2.09	3.42	1.46	\$ 3,036	\$ 4,959	\$ 2,125	\$ 10,120
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	171,028.62	119,720.03	51,308.59	\$ 171,029	\$ 119,720	\$ 51,309	\$ 342,057
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
5 - Existing 345 kV Tremont Substation_GIS_Interconnection							\$ 11,049,919	\$ 6,363,269	\$ 4,000,677	\$ 21,413,864
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		106,760.29	45,754.41	\$ -	\$ 106,760	\$ 45,754	\$ 152,515
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		271,462.42		\$ -	\$ 271,462	\$ -	\$ 271,462
9.4	Utility PM and Project Oversight	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.5	Site Accommodation, Facilities, Storage	1.0	LS	67,865.60			\$ 67,866	\$ -	\$ -	\$ 67,866
	Engineering									
9.6	Design Engineering	1.00	LS		542,924.84		\$ -	\$ 542,925	\$ -	\$ 542,925
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		47,505.92		\$ -	\$ 47,506	\$ -	\$ 47,506
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		254,496.02		\$ -	\$ 254,496	\$ -	\$ 254,496
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.14	Warranties / LOC's	1.00	LS		20,359.68		\$ -	\$ 20,360	\$ -	\$ 20,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			83,963.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	2,518.89	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 640,000	\$ -	\$ -	\$ 640,000	\$ 640,000
9.20	Sales Tax on Materials	8.80%	LS	11,049,918.55			\$ 972,393	\$ -	\$ -	\$ 972,393
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		21,413.86		\$ -	\$ 21,414	\$ -	\$ 21,414
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283

Propel NY - TO51 AS5

6 - Existing Sprain Brook 345 kV Interconnection

Total: \$ 41,345,604

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
6 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 212,245	\$ 195,170	\$ 108,661	\$ 516,077
2. SUBSTATION FOUNDATIONS	\$ 596,587	\$ 681,814	\$ 426,133	\$ 1,704,534
3. SUBSTATION STRUCTURES	\$ 512,697	\$ 521,222	\$ 316,834	\$ 1,350,753
4. MAJOR EQUIPMENT	\$ 11,835,133	\$ 3,612,445	\$ 2,355,173	\$ 17,802,751
5. LOW VOLTAGE & CONTROL CABLE	\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
6. CONDUIT & CABLE TRENCH	\$ 971,587	\$ 618,043	\$ 347,203	\$ 1,936,833
7. GROUND GRID	\$ 104,399	\$ 68,802	\$ 13,147	\$ 186,348
8. CONTROL ENCLOSURE	\$ 469,219	\$ 375,375	\$ 93,844	\$ 938,437
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,456,728	\$ 3,188,784	\$ 904,124	\$ 5,549,635
Turnkey cost (HVDC, GIS)	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
Non-Turnkey cost	\$ 11,520,771	\$ 6,432,866	\$ 2,661,611	\$ 20,615,248
SUBTOTAL (Costs):	\$ 16,298,449	\$ 9,299,472	\$ 4,572,682	\$ 30,170,604
CONTRACTOR MARK-UP (OH&P):	\$ 2,360,399	\$ 1,329,912	\$ 593,754	\$ 4,284,066
SUBTOTAL:	\$ 18,658,848	\$ 10,629,385	\$ 5,166,437	\$ 34,454,670
CONTINGENCY ON ENTIRE PROJECT	\$ 3,731,770	\$ 2,125,877	\$ 1,033,287	\$ 6,890,934
TOTAL:	\$ 22,390,618	\$ 12,755,262	\$ 6,199,724	\$ 41,345,604

Description of Work: Interconnection Facilities to the existing Con Edison Sprain Brook Substation, located in the City of Yonkers, Westchester County. Sprain Brook Substation is an existing 345 kV AIS substation with a BAAH configuration. The Solution includes installing two new underground 345 kV lines each with a shunt reactor each, in the new bay position

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing Sprain Brook 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,640	\$ 5,760	\$ 14,400
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	962	SY	4.85	7.20	4.80	\$ 4,667	\$ 6,928	\$ 4,619	\$ 16,213
1.4	Strip and Dispose Top Soil	1,291	CY		24.50	10.50	\$ -	\$ 31,621	\$ 13,552	\$ 45,173
1.5	Site Grading- Excavation for Substation Pad	3,872	CY		9.00	6.00	\$ -	\$ 34,848	\$ 23,232	\$ 58,080
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,091	CY		21.00	9.00	\$ -	\$ 43,908.48	\$ 18,817.92	\$ 62,726.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,136	CY		2.40	1.60	\$ -	\$ 7,527	\$ 5,018	\$ 12,545
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,091	CY	25.00	2.40	1.60	\$ 52,272	\$ 5,018	\$ 3,345	\$ 60,636
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,872	SY	11.00	6.00	4.00	\$ 42,592	\$ 23,232	\$ 15,488	\$ 81,312
1.11	Site Surfacing - Aggregate 6" Thick	3,872	SY	16.50	4.50	3.00	\$ 63,888	\$ 17,424	\$ 11,616	\$ 92,928
1.12	7' Station Fence w/ Barbed Wire & Grounding	350	LF	13.85	13.85	6.92	\$ 4,847	\$ 4,847	\$ 2,423	\$ 12,117
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	1	LS	40,089.60	7,680.00	3,624.00	\$ 40,090	\$ 7,680	\$ 3,624	\$ 51,394
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.17	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.18	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.20	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 212,245	\$ 195,170	\$ 108,661	\$ 516,077
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	188	CY	703.89	804.44	502.78	\$ 132,344	\$ 151,251	\$ 94,532	\$ 378,127
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	37	CY	703.89	804.44	502.78	\$ 25,720	\$ 29,394	\$ 18,371	\$ 73,486
2.8	345kV, GIS to air bushing	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.9	345kV, GIS support-1 Ph	24	CY	703.89	804.44	502.78	\$ 17,147	\$ 19,596	\$ 12,248	\$ 48,990
2.10	345kV, GIS support-3 Ph	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.11	345kV, GIS Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.12	345kV, Cable sealing end	53	CY	703.89	804.44	502.78	\$ 37,165	\$ 42,474	\$ 26,547	\$ 106,186
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	252	CY	703.89	804.44	502.78	\$ 177,379	\$ 202,719	\$ 126,699	\$ 506,797
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.20	345kV, Circuit Breaker (GIS), outdoor rated	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80"		EA							
2.33	Local Control Cabinet foundation	3	CY	703.89	804.44	502.78	\$ 2,086	\$ 2,384	\$ 1,490	\$ 5,959
TOTAL - 345KV FOUNDATION							\$ 596,587	\$ 681,814	\$ 426,133	\$ 1,704,534
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	17	EA	8,346.00	5,758.74	3,839.16	\$ 141,882	\$ 97,899	\$ 65,266	\$ 305,046
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	9	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.12	345kV, Cable sealing end	4	EA	8,346.00	5,758.74	3,839.16	\$ 33,384	\$ 23,035	\$ 15,357	\$ 71,776
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	1,311	LF	25.00	184.94	123.29	\$ 32,775	\$ 242,454	\$ 161,636	\$ 436,865
3.24	AL. Bus fittings	1	LS	39,330.00	39,330.00	19,665.00	\$ 39,330	\$ 39,330	\$ 19,665	\$ 98,325
3.25	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 512,697	\$ 521,222	\$ 316,834	\$ 1,350,753
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -			
4.2	345kV, GIS fast acting GND SW	9	EA				\$ -			
4.3	345kV, GIS to air bushing	6	EA				\$ -			
4.4	345kV, GIS Cable sealing end	6	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	12	EA	27,144.00	5,460.00	2,340.00	\$ 325,728	\$ 65,520	\$ 28,080	\$ 419,328
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	2	EA	2,385,863.50	3,520.00	880.00	\$ 4,771,727	\$ 7,040	\$ 1,760	\$ 4,780,527
4.12	Transport & Testing- Shunt Reactor	2	EA		279,400.00	182,600.00	\$ -	\$ 558,800	\$ 365,200	\$ 924,000
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	2	EA	980,000.00	57,239.00	24,531.00	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	4	EA	1,194,419.50	716,651.70	477,767.80	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor	564	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	10	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 11,835,133	\$ 3,612,445	\$ 2,355,173	\$ 17,802,751

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	26,400	LF	5.30	1.43	0.29	\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	4,200	LF	3.95	10.80	5.40	\$ 16,590	\$ 45,360	\$ 22,680	\$ 84,630
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit	1,000	LF	266.73	202.15	100.00	\$ 266,731	\$ 202,146	\$ 100,005	\$ 568,882
6.8	345kV UG- Cable	3,000	LF	167.00	100.20	66.80	\$ 501,000	\$ 300,600	\$ 200,400	\$ 1,002,000
6.9	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.14	Fiber Optic Cable	1,000	LF	7.40	3.33	2.22	\$ 7,397	\$ 3,331	\$ 2,220	\$ 12,948
6.15	Ground Continuity Conductor	1,000	LF	13.04	7.53	5.02	\$ 13,039	\$ 7,527	\$ 5,018	\$ 25,584
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 971,587	\$ 618,043	\$ 347,203	\$ 1,936,833
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	8,357	LF	2.09	3.42	1.46	\$ 17,474	\$ 28,542	\$ 12,232	\$ 58,248
7.2	Caweld, DSA, 4/0 , T, CROSS	427	EA	165.00	75.00		\$ 70,455	\$ 32,025	\$ -	\$ 102,480
7.3	Ground Rod, 3/4" x 15'	122	EA	135.00	67.50	7.50	\$ 16,470	\$ 8,235	\$ 915	\$ 25,620
TOTAL - GROUND GRID							\$ 104,399	\$ 68,802	\$ 13,147	\$ 186,348
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.9	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 469,219	\$ 375,375	\$ 93,844	\$ 938,437
6 - Existing Sprain Brook 345 kV_ Interconnection							\$ 14,841,721	\$ 6,110,688	\$ 3,668,559	\$ 24,620,968
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		175,054.91	75,023.53	\$ -	\$ 175,055	\$ 75,024	\$ 250,078
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		150,656.12		\$ -	\$ 150,656	\$ -	\$ 150,656
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		602,624.49		\$ -	\$ 602,624	\$ -	\$ 602,624
9.4	Utility PM and Project Oversight	1.0	LS		150,656.12		\$ -	\$ 150,656	\$ -	\$ 150,656
9.5	Site Accommodation, Facilities, Storage	1.0	LS	150,656.12			\$ 150,656	\$ -	\$ -	\$ 150,656
	Engineering									
9.6	Design Engineering	1.00	LS		1,205,248.98		\$ -	\$ 1,205,249	\$ -	\$ 1,205,249
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,459.29		\$ -	\$ 105,459	\$ -	\$ 105,459
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,960.46		\$ -	\$ 564,960	\$ -	\$ 564,960
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,656.12		\$ -	\$ 150,656	\$ -	\$ 150,656
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,196.84		\$ -	\$ 45,197	\$ -	\$ 45,197
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.16	Real Estate (Acquisition)	-	LS			716,770.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,503.10	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 820,000	\$ -	\$ -	\$ 820,000	\$ 820,000
9.20	Sales Tax on Materials	8.80%	LS	14,841,721.32			\$ 1,306,071	\$ -	\$ -	\$ 1,306,071
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		24,620.97		\$ -	\$ 24,621	\$ -	\$ 24,621
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,456,728	\$ 3,188,784	\$ 904,124	\$ 5,549,635

Propel NY - TO51 AS5

7 - Existing Ruland 138 kV Upgrade & Interconnection

Total: \$9,339,029

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
7 - Existing Ruland 138 kV_ Upgrade & Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$128,372	\$144,027	\$80,858	\$353,257
2. SUBSTATION FOUNDATIONS	\$552,928	\$423,460	\$274,263	\$1,250,651
3. SUBSTATION STRUCTURES	\$160,564	\$121,039	\$114,383	\$395,986
4. MAJOR EQUIPTMENT	\$1,478,428	\$194,390	\$81,596	\$1,754,413
5. LOW VOLTAGE & CONTROL CABLE	\$101,712	\$27,504	\$5,501	\$134,717
6. CONDUIT & CABLE TRENCH	\$322,346	\$213,089	\$100,110	\$635,545
7. GROUND GRID	\$62,882	\$45,524	\$10,639	\$119,045
8. CONTROL ENCLOSURE	\$170,625	\$136,500	\$34,125	\$341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$311,900	\$1,073,391	\$225,205	\$1,610,496
SUBTOTAL (Costs):	\$3,289,756	\$2,378,925	\$926,678	\$6,595,359
CONTRACTOR MARK-UP (OH&P)	\$592,156	\$428,207	\$166,802	\$1,187,165
SUBTOTAL:	\$3,881,912	\$2,807,132	\$1,093,480	\$7,782,524
CONTINGENCY ON ENTIRE PROJECT	\$776,382	\$561,426	\$218,696	\$1,556,505
TOTAL:	\$4,658,294	\$3,368,558	\$1,312,176	\$9,339,029

Description of Work: Upgrades and Potential Interconnection Facilities to the existing LIPA Ruland Road Substation, located in the Hamlet of Melville, Town of Huntington, Suffolk County. Ruland Road Substation is an existing 138 kV AIS substation configured with six (6) BAAH bays. The Solution includes installing two (2) air core reactors in series to the 138 kV Lines 138-561 and 138-562, respectively, which are proposed as Upgrades and two (3) 138 kV circuit breakers, which are proposed as Potential Interconnection Facilities										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.6	ACRE	-	10,800.00	7,200.00	\$-	\$6,480	\$4,320	\$10,800
1.2	Demolition	1	LS	-	4,800.00	3,200.00	\$-	\$4,800	\$3,200	\$8,000
1.3	New Access Road - 20'	489	SY	4.85	7.20	4.80	\$2,371	\$3,520	\$2,347	\$8,238
1.4	Strip and Dispose Top Soil	968	CY		24.50	10.50	\$-	\$23,716	\$10,164	\$33,880
1.5	Site Grading- Excavation for Substation Pad	2,904	CY		9.00	6.00	\$-	\$26,136	\$17,424	\$43,560
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,568	CY		21.00	9.00	\$-	\$32,931.36	\$14,113.44	\$47,044.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,352	CY		2.40	1.60	\$-	\$5,645	\$3,764	\$9,409
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,568	CY	25.00	2.40	1.60	\$39,204	\$3,764	\$2,509	\$45,477
1.9	Blasting		EA				\$-	\$-	\$-	\$-
1.10	Install substation 8" pad base	2,904	SY	11.00	6.00	4.00	\$31,944	\$17,424	\$11,616	\$60,984
1.11	Site Surfacing - Aggregate 6" Thick	2,904	SY	16.50	4.50	3.00	\$47,916	\$13,068	\$8,712	\$69,696
1.12	7' Station Fence w/ Barbed Wire & Grounding	220	LF	13.85	13.85	6.92	\$3,047	\$3,047	\$1,523	\$7,616
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$-	\$-	\$-	\$-
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$-	\$-	\$-	\$-
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$-	\$-	\$-	\$-
1.16	Seeding	0	SF	1.50	1.50	1.00	\$-	\$-	\$-	\$-
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$1,265	\$1,659	\$378	\$3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$2,625	\$1,838	\$788	\$5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$-	\$-	\$-	\$-
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$-	\$-	\$-	\$-
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$-	\$-	\$-	\$-
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$128,372	\$144,027	\$80,858	\$353,257
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	\$ 116,803	\$ 133,489	\$ 83,430	\$ 333,722
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	\$ 102,429	\$ 117,062	\$ 73,164	\$ 292,655
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 552,928	\$ 423,460	\$ 274,263	\$ 1,250,651
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	-	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	\$ 85,800	\$ 51,480	\$ 68,640	\$ 205,920
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	126	LF	25.00	184.94	123.29	\$ 3,150	\$ 23,302	\$ 15,535	\$ 41,987
3.26	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	\$ 3,780	\$ 3,780	\$ 1,890	\$ 9,450

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 160,564	\$ 121,039	\$ 114,383	\$ 395,986
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	6	EA	10,000.00	7,970.08	3,415.75	\$ 60,000	\$ 47,821	\$ 20,495	\$ 128,315
4.24	138kV, Air core reactors (3 Ph)	6	EA	40,500.00	6,500.00	2,500.00	\$ 243,000	\$ 39,000	\$ 15,000	\$ 297,000
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,478,428	\$ 194,390	\$ 81,596	\$ 1,754,413

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	19,200	LF	5.30	1.43	0.29	\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,900	LF	11.15	10.80	5.40	\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	300	LF	266.50	53.04	13.26	\$ 79,950	\$ 15,912	\$ 3,978	\$ 99,840
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.9	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.12	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
TOTAL - CONDUIT & CABLE TRENCH							\$ 322,346	\$ 213,089	\$ 100,110	\$ 635,545
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,500	LF	2.09	3.42	1.46	\$ 13,592	\$ 22,199	\$ 9,514	\$ 45,305
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		\$ 29,040	\$ 13,200	\$ -	\$ 42,240
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	\$ 20,250	\$ 10,125	\$ 1,125	\$ 31,500
TOTAL - GROUND GRID							\$ 62,882	\$ 45,524	\$ 10,639	\$ 119,045
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
7 - Existing Ruland 138 kV_ Upgrade & Interconnection							\$ 2,977,856	\$ 1,305,534	\$ 701,473	\$ 4,984,863
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		70,245.26	30,105.11	\$ -	\$ 70,245	\$ 30,105	\$ 100,350
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		199,394.54		\$ -	\$ 199,395	\$ -	\$ 199,395
9.4	Utility PM and Project Oversight	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.5	Site Accommodation, Facilities, Storage	1.0	LS	49,848.63			\$ 49,849	\$ -	\$ -	\$ 49,849
	Engineering									
9.6	Design Engineering	1.00	LS		398,789.08		\$ -	\$ 398,789	\$ -	\$ 398,789
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		34,894.04		\$ -	\$ 34,894	\$ -	\$ 34,894
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		186,932.38		\$ -	\$ 186,932	\$ -	\$ 186,932
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		14,954.59		\$ -	\$ 14,955	\$ -	\$ 14,955
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	51,052.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	1,531.56	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 186,000	\$ -	\$ -	\$ 186,000	\$ 186,000
9.20	Sales Tax on Materials	8.80%	LS	2,977,855.99			\$ 262,051	\$ -	\$ -	\$ 262,051
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,984.86		\$ -	\$ 4,985	\$ -	\$ 4,985
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 311,900	\$ 1,073,391	\$ 225,205	\$ 1,610,496

Propel NY - TO51 AS5

8 -Existing Shore Road 138 kV Interconnection

Total: \$ 11,923,278

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
8 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 581,223	\$ 386,312	\$ 254,245	\$ 1,221,780
3. SUBSTATION STRUCTURES	\$ 239,991	\$ 328,920	\$ 214,495	\$ 783,407
4. MAJOR EQUIPMENT	\$ 2,326,452	\$ 217,004	\$ 93,002	\$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE	\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
6. CONDUIT & CABLE TRENCH	\$ 348,046	\$ 218,596	\$ 97,101	\$ 663,742
7. GROUND GRID	\$ 27,450	\$ 18,156	\$ 3,495	\$ 49,101
8. CONTROL ENCLOSURE	\$ 343,281	\$ 352,625	\$ 120,656	\$ 816,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 419,013	\$ 1,351,818	\$ 255,389	\$ 2,026,220
SUBTOTAL (Costs):	\$ 4,453,917	\$ 2,918,984	\$ 1,047,493	\$ 8,420,394
CONTRACTOR MARK-UP (OH&P)	\$ 801,705	\$ 525,417	\$ 188,549	\$ 1,515,671
SUBTOTAL:	\$ 5,255,622	\$ 3,444,401	\$ 1,236,042	\$ 9,936,065
CONTINGENCY ON ENTIRE PROJECT	\$ 1,051,124	\$ 688,880	\$ 247,208	\$ 1,987,213
TOTAL:	\$ 6,306,746	\$ 4,133,281	\$ 1,483,251	\$ 11,923,278

Description of Work: Interconnection Facilities to the existing LIPA Shore Road Substation, located in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. Shore Road Substation is an existing 138 kV AIS substation with a main-tie main configuration. The Solution includes installing two (2) additional circuit breakers to create a six (6) position ring bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 -Existing Shore Road 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	18	CY	703.89	804.44	502.78	\$ 12,514	\$ 14,301	\$ 8,938	\$ 35,753
2.24	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.25	138kV, Bus support-1 Ph, low	77	CY	703.89	804.44	502.78	\$ 54,298	\$ 62,055	\$ 38,784	\$ 155,136
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	25.00	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	16	EA	18,000.00	3,200.00	2,800.00	\$ 288,000	\$ 51,200	\$ 44,800	\$ 384,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 581,223	\$ 386,312	\$ 254,245	\$ 1,221,780
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.16	138kV, Bus support-1 Ph, low	19	EA	2,782.00	1,919.84	1,279.89	\$ 52,858	\$ 36,477	\$ 24,318	\$ 113,653
3.17	138kV, Disconnect Switch	3	EA	5,694.00	3,928.86	2,619.24	\$ 17,082	\$ 11,787	\$ 7,858	\$ 36,726
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	957	LF	25.00	184.94	123.29	\$ 23,925	\$ 176,986	\$ 117,990	\$ 318,901
3.24	AL. Bus fittings	1	LS	28,710.00	28,710.00	14,355.00	\$ 28,710	\$ 28,710	\$ 14,355	\$ 71,775
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 239,991	\$ 328,920	\$ 214,495	\$ 783,407
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	4	EA	510,000.00	13,559.00	5,811.00	\$ 2,040,000	\$ 54,236	\$ 23,244	\$ 2,117,480
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	12	EA	10,000.00	7,970.08	3,415.75	\$ 120,000	\$ 95,641	\$ 40,989	\$ 256,630
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 2,326,452	\$ 217,004	\$ 93,002	\$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	31,800	LF	5.30	1.43	0.29	\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,450	LF	11.15	10.80	5.40	\$ 71,918	\$ 69,660	\$ 34,830	\$ 176,408
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	450	LF	266.50	53.04	13.26	\$ 119,925	\$ 23,868	\$ 5,967	\$ 149,760
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	225	LF	81.00	107.00	57.00	\$ 18,225	\$ 24,075	\$ 12,825	\$ 55,125
6.9	138kV UG- Cable	675	LF	156.00	94.00	62.00	\$ 105,300	\$ 63,450	\$ 41,850	\$ 210,600
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	225	LF	7.40	3.33	2.22	\$ 1,664	\$ 749	\$ 500	\$ 2,913
6.12	Ground Continuity Conductor	225	LF	13.04	7.53	5.02	\$ 2,934	\$ 1,694	\$ 1,129	\$ 5,756
TOTAL - CONDUIT & CABLE TRENCH							\$ 348,046	\$ 218,596	\$ 97,101	\$ 663,742
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,224	LF	2.09	3.42	1.46	\$ 4,650	\$ 7,596	\$ 3,255	\$ 15,501
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID		-					\$ 27,450	\$ 18,156	\$ 3,495	\$ 49,101
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.8	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 343,281	\$ 352,625	\$ 120,656	\$ 816,562
8 -Existing Shore Road 138 kV_ Interconnection							\$ 4,034,903	\$ 1,567,166	\$ 792,104	\$ 6,394,174
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		82,574.45	35,389.05	\$ -	\$ 82,574	\$ 35,389	\$ 117,964
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		255,766.94		\$ -	\$ 255,767	\$ -	\$ 255,767
9.4	Utility PM and Project Oversight	1.0	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.5	Site Accommodation, Facilities, Storage	1.0	LS	63,941.74			\$ 63,942	\$ -	\$ -	\$ 63,942
	Engineering									
9.6	Design Engineering	1.00	LS		511,533.89		\$ -	\$ 511,534	\$ -	\$ 511,534
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		-		\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		44,759.22		\$ -	\$ 44,759	\$ -	\$ 44,759
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		239,781.51		\$ -	\$ 239,782	\$ -	\$ 239,782
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		19,182.52		\$ -	\$ 19,183	\$ -	\$ 19,183
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			242,657.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	7,279.71	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 220,000	\$ -	\$ -	\$ 220,000	\$ 220,000
9.20	Sales Tax on Materials	8.80%	LS	4,034,903.48			\$ 355,072	\$ -	\$ -	\$ 355,072
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,394.17		\$ -	\$ 6,394	\$ -	\$ 6,394
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 419,013	\$ 1,351,818	\$ 255,389	\$ 2,026,220

Propel NY - TO51 AS5

9 -Existing Holbrook 138 Kv Upgrade

Total: \$ 1,907,161

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
9 -Existing Holbrook 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220
SUBTOTAL (Costs):	\$ 830,227	\$ 415,860	\$ 100,777	\$ 1,346,865
CONTRACTOR MARK-UP (OH&P)	\$ 149,441	\$ 74,855	\$ 18,140	\$ 242,436
SUBTOTAL:	\$ 979,668	\$ 490,715	\$ 118,917	\$ 1,589,301
CONTINGENCY ON ENTIRE PROJECT	\$ 195,934	\$ 98,143	\$ 23,783	\$ 317,860
TOTAL:	\$ 1,175,602	\$ 588,858	\$ 142,701	\$ 1,907,161

Description of Work:The Applicants propose Upgrades to the Holbrook Substation, which is an existing LIPA 138 kV AIS substation, configured as an eight (8) position ring bus. The Holbrook Substation is located in the Hamlet of Holbrook in the Town of Brookhaven in Suffolk County.The 138 kV, 138-882 Line currently feeds two (2) 138 kV/69 kV transformers via an AIS disconnect before connecting into its bus section within the ring bus. The Solution involves replacing the existing switch #1322 with a new hybrid PASS GIS 138 kV breaker system with integrated disconnect and ground switches.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 -Existing Holbrook 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9 -Existing Holbrook 138 Kv_ Upgrade							\$ 753,760	\$ 202,826	\$ 57,059	\$ 1,013,645
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,095.98	3,898.28	\$ -	\$ 9,096	\$ 3,898	\$ 12,994
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		40,545.79		\$ -	\$ 40,546	\$ -	\$ 40,546
9.4	Utility PM and Project Oversight	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.5	Site Accommodation, Facilities, Storage	1.0	LS	10,136.45			\$ 10,136	\$ -	\$ -	\$ 10,136
	Engineering									
9.6	Design Engineering	1.00	LS		81,091.59		\$ -	\$ 81,092	\$ -	\$ 81,092
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		7,095.51		\$ -	\$ 7,096	\$ -	\$ 7,096
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		38,011.68		\$ -	\$ 38,012	\$ -	\$ 38,012
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,040.93		\$ -	\$ 3,041	\$ -	\$ 3,041
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 38,000	\$ -	\$ -	\$ 38,000	\$ 38,000
9.20	Sales Tax on Materials	8.80%	LS	753,759.78			\$ 66,331	\$ -	\$ -	\$ 66,331
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,013.64		\$ -	\$ 1,014	\$ -	\$ 1,014
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220

Propel NY - TO51 AS5

10 -Existing Newbridge 138 Kv Upgrade

Total: \$ 4,643,995

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
10 -Existing Newbridge 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS	\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867
SUBTOTAL (Costs):	\$ 2,420,697	\$ 677,764	\$ 181,196	\$ 3,279,658
CONTRACTOR MARK-UP (OH&P)	\$ 435,726	\$ 121,998	\$ 32,615	\$ 590,338
SUBTOTAL:	\$ 2,856,423	\$ 799,762	\$ 213,811	\$ 3,869,996
CONTINGENCY ON ENTIRE PROJECT	\$ 571,285	\$ 159,952	\$ 42,762	\$ 773,999
TOTAL:	\$ 3,427,707	\$ 959,714	\$ 256,574	\$ 4,643,995

Description of Work: Upgrades to the existing LIPA 138 kV Newbridge Substation, located in the Town of Hempstead, Nassau County. Newbridge Substation is an existing 138 kV AIS substation with a six (6) bay BAAH configuration and 138 kV/69 kV transformers connected to each main bus. The Solution includes the addition of a new breaker in series with the existing 138 kV CB -1460, providing an additional contingency to the 138 kV Lines 138-465 and 138-461

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10 -Existing Newbridge 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	920,000.00	13,559.00	5,811.00	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10 -Existing Newbridge 138 Kv_ Upgrade							\$ 2,202,270	\$ 177,052	\$ 83,468	\$ 2,462,790
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,118.21	3,907.81	\$ -	\$ 9,118	\$ 3,908	\$ 13,026
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		98,511.60		\$ -	\$ 98,512	\$ -	\$ 98,512
9.4	Utility PM and Project Oversight	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.5	Site Accommodation, Facilities, Storage	1.0	LS	24,627.90			\$ 24,628	\$ -	\$ -	\$ 24,628
	Engineering									
9.6	Design Engineering	1.00	LS		197,023.21		\$ -	\$ 197,023	\$ -	\$ 197,023
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		17,239.53		\$ -	\$ 17,240	\$ -	\$ 17,240
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		92,354.63		\$ -	\$ 92,355	\$ -	\$ 92,355
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		7,388.37		\$ -	\$ 7,388	\$ -	\$ 7,388
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 92,000	\$ -	\$ -	\$ 92,000	\$ 92,000
9.20	Sales Tax on Materials	8.80%	LS	2,202,269.72			\$ 193,800	\$ -	\$ -	\$ 193,800
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,462.79		\$ -	\$ 2,463	\$ -	\$ 2,463

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867

Propel NY - TO51 AS5

11 - Existing EGC 138 kV Upgrade

Total: \$ 17,743,027

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
11 - Existing EGC 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS	\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670
3. SUBSTATION STRUCTURES	\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843
4. MAJOR EQUIPMENT	\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458
7. GROUND GRID	\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944
SUBTOTAL (Costs):	\$ 4,951,528	\$ 5,301,753	\$ 2,277,106	\$ 12,530,386
CONTRACTOR MARK-UP (OH&P)	\$ 891,275	\$ 954,316	\$ 409,879	\$ 2,255,470
SUBTOTAL:	\$ 5,842,803	\$ 6,256,069	\$ 2,686,985	\$ 14,785,856
CONTINGENCY ON ENTIRE PROJECT	\$ 1,168,561	\$ 1,251,214	\$ 537,397	\$ 2,957,171
TOTAL:	\$ 7,011,363	\$ 7,507,282	\$ 3,224,381	\$ 17,743,027

Description of Work: Upgrades to the existing LIPA East Garden City Substation, Hamlet of Uniondale, Town of Hempstead, Nassau County. The LIPA East Garden City Substation is an existing 138 kV AIS substation with a ten (10) position ring bus configuration.The Solution includes the installation of three (3) air core reactors with by-pass circuit, in series, to the 138 kV lines 138-462,138-465, and 138-463, respectively. Due to current site constraints, the new series reactors will be installed in the property adjacent to the existing station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11 - Existing EGC 138 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000
1.3	New Access Road - 20'	2,051	SY	4.85	7.20	4.80	\$ 9,945	\$ 14,764	\$ 9,843	\$ 34,552
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	6,423	CY		9.00	6.00	\$ -	\$ 57,811	\$ 38,540	\$ 96,351
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	867	CY		21.00	9.00	\$ -	\$ 18,210	\$ 7,804	\$ 26,015
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,804	CY		2.40	1.60	\$ -	\$ 18,731	\$ 12,487	\$ 31,218
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	867	CY	25.00	2.40	1.60	\$ 21,679	\$ 2,081	\$ 1,387	\$ 25,148
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,217	LF	13.85	13.85	6.92	\$ 16,853	\$ 16,853	\$ 8,427	\$ 42,133
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	75,203.20	57,600.00	27,180.00	\$ 75,203	\$ 57,600	\$ 27,180	\$ 159,983
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	1,826	LF	2.41	3.16	0.72	\$ 4,399	\$ 5,769	\$ 1,314	\$ 11,482
1.18	Temporary fencing	1,217	LF	7.50	5.25	2.25	\$ 9,128	\$ 6,389	\$ 2,738	\$ 18,255
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	408	LF	156.00	117.00	117.00	\$ 63,648	\$ 47,736	\$ 47,736	\$ 159,120
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.29	138kV, Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	249	CY	703.89	804.44	502.78	\$ 175,204	\$ 200,233	\$ 125,146	\$ 500,583
2.30	138kV, Surge arrester	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	3	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	6	EA	21,450.00	12,870.00	17,160.00	\$ 128,700	\$ 77,220	\$ 102,960	\$ 308,880
3.23	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.26	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	27	EA	4,446.00	1,050.00	450.00	\$ 120,042	\$ 28,350	\$ 12,150	\$ 160,542
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	9	EA	46,833.00	6,500.00	2,500.00	\$ 421,497	\$ 58,500	\$ 22,500	\$ 502,497
4.26	138kV, Surge arrester	18	EA	4,446.00	4,200.00	1,800.00	\$ 80,028	\$ 75,600	\$ 32,400	\$ 188,028
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	850	LF	266.50	53.04	13.26	\$ 226,525	\$ 45,084	\$ 11,271	\$ 282,880
6.7	345kV UG- Conduit		LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	\$ 299,700	\$ 395,900	\$ 210,900	\$ 906,500
6.11	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	\$ 1,731,600	\$ 1,043,400	\$ 688,200	\$ 3,463,200
6.12	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.13	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	\$ 27,369	\$ 12,323	\$ 8,215	\$ 47,908
6.14	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	\$ 48,244	\$ 27,850	\$ 18,567	\$ 94,661
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	9,350	LF	2.09	3.42	1.46	\$ 19,551	\$ 31,933	\$ 13,686	\$ 65,170
7.2	Caweld, DSA, 4/0 , T, CROSS	252	EA	165.00	75.00		\$ 41,580	\$ 18,900	\$ -	\$ 60,480
7.3	Ground Rod, 3/4" x 15'	221	EA	135.00	67.50	7.50	\$ 29,835	\$ 14,918	\$ 1,658	\$ 46,410
TOTAL - GROUND GRID							\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	356,309.62	249,416.73	106,892.89	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
11 - Existing EGC 138 kV_ Upgrade							\$ 4,463,312	\$ 3,223,882	\$ 1,857,249	\$ 9,544,442
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		177,839.56	76,216.96	\$ -	\$ 177,840	\$ 76,217	\$ 254,057
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		381,777.69		\$ -	\$ 381,778	\$ -	\$ 381,778
9.4	Utility PM and Project Oversight	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.5	Site Accommodation, Facilities, Storage	1.0	LS	95,444.42			\$ 95,444	\$ -	\$ -	\$ 95,444
	Engineering									
9.6	Design Engineering	1.00	LS		763,555.37		\$ -	\$ 763,555	\$ -	\$ 763,555
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		66,811.10		\$ -	\$ 66,811	\$ -	\$ 66,811
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		357,916.58		\$ -	\$ 357,917	\$ -	\$ 357,917
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		28,633.33		\$ -	\$ 28,633	\$ -	\$ 28,633
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 340,000	\$ -	\$ -	\$ 340,000	\$ 340,000
9.20	Sales Tax on Materials	8.80%	LS	4,463,311.81			\$ 392,771	\$ -	\$ -	\$ 392,771
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,544.44		\$ -	\$ 9,544	\$ -	\$ 9,544
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944

Propel NY - TO51 AS5

12 - Existing Rainey 345 kV Upgrade

Total: \$ 9,824,483

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS	\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879
SUBTOTAL (Costs):	\$ 4,800,582	\$ 1,658,463	\$ 479,150	\$ 6,938,195
CONTRACTOR MARK-UP (OH&P)	\$ 864,105	\$ 298,523	\$ 86,247	\$ 1,248,875
SUBTOTAL:	\$ 5,664,686	\$ 1,956,986	\$ 565,397	\$ 8,187,070
CONTINGENCY ON ENTIRE PROJECT	\$ 1,132,937	\$ 391,397	\$ 113,079	\$ 1,637,414
TOTAL:	\$ 6,797,623	\$ 2,348,384	\$ 678,476	\$ 9,824,483

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of two new breakers in series with the existing 345 kV CB -1E and CB-6E respectively, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Existing Rainey 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	90,000.00	60,000.00	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	40,089.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	6	EA	18,000.00	3,200.00	2,800.00	\$ 108,000	\$ 19,200	\$ 16,800	\$ 144,000
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	4	EA	980,000.00	57,239.00	24,531.00	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
12 - Existing Rainey 345 kV_ Upgrade							\$ 4,364,337	\$ 587,278	\$ 266,700	\$ 5,218,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		29,889.25	12,809.68	\$ -	\$ 29,889	\$ 12,810	\$ 42,699
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		208,732.61		\$ -	\$ 208,733	\$ -	\$ 208,733
9.4	Utility PM and Project Oversight	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.5	Site Accommodation, Facilities, Storage	1.0	LS	52,183.15			\$ 52,183	\$ -	\$ -	\$ 52,183
	Engineering									
9.6	Design Engineering	1.00	LS		417,465.22		\$ -	\$ 417,465	\$ -	\$ 417,465
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		36,528.21		\$ -	\$ 36,528	\$ -	\$ 36,528
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		195,686.82		\$ -	\$ 195,687	\$ -	\$ 195,687
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
0	Warranties / LOC's	1.00	LS		15,654.95		\$ -	\$ 15,655	\$ -	\$ 15,655
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 196,000	\$ -	\$ -	\$ 196,000	\$ 196,000
9.20	Sales Tax on Materials	8.80%	LS	4,364,336.72			\$ 384,062	\$ -	\$ -	\$ 384,062
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,218.32		\$ -	\$ 5,218	\$ -	\$ 5,218
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879

Propel NY - TO51 AS5

13 - Existing EGC 345 kV Upgrade

Total: \$ 161,831,509

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
13 - Existing EGC 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 691,550	\$ 928,374	\$ 609,480	\$ 2,229,404
2. SUBSTATION FOUNDATIONS	\$ 3,009,479	\$ 3,185,817	\$ 1,961,321	\$ 8,156,617
3. SUBSTATION STRUCTURES	\$ 1,291,407	\$ 1,245,902	\$ 818,317	\$ 3,355,626
4. MAJOR EQUIPTMENT	\$ 37,521,801	\$ 3,233,597	\$ 1,433,416	\$ 42,188,813
5. LOW VOLTAGE & CONTROL CABLE	\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
6. CONDUIT & CABLE TRENCH	\$ 2,508,334	\$ 1,336,900	\$ 783,414	\$ 4,628,648
7. GROUND GRID	\$ 212,150	\$ 153,307	\$ 35,810	\$ 401,267
8. CONTROL ENCLOSURE	\$ 1,514,278	\$ 1,228,091	\$ 405,187	\$ 3,147,556
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,800,849	\$ 13,477,410	\$ 31,301,689	\$ 49,579,948
SUBTOTAL (Costs):	\$ 52,002,783	\$ 24,911,878	\$ 37,373,128	\$ 114,287,789
CONTRACTOR MARK-UP (OH&P)	\$ 9,360,501	\$ 4,484,138	\$ 6,727,163	\$ 20,571,802
SUBTOTAL:	\$ 61,363,284	\$ 29,396,016	\$ 44,100,291	\$ 134,859,591
CONTINGENCY ON ENTIRE PROJECT	\$ 12,272,657	\$ 5,879,203	\$ 8,820,058	\$ 26,971,918
TOTAL:	\$ 73,635,941	\$ 35,275,219	\$ 52,920,349	\$ 161,831,509

Description of Work: Upgrade to the 345 kV East Garden City Substation, to be located at 555 Stewart Avenue, Hamlet of Uniondale, Town of Hempstead, Nassau County. The New 345 kV East Garden City Substation will be connected by four (4) new 345 kV underground transmission lines and the existing Y-49 Line. Also, it will serve the two (2) existing 345 kV/138 kV transformers located in the existing LIPA 138 kV East Garden City Substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 - Existing EGC 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,640	\$ 5,760	\$ 14,400
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	9,087	SY	4.85	7.20	4.80	\$ 44,071	\$ 65,425	\$ 43,617	\$ 153,112
1.4	Strip and Dispose Top Soil	1,291	CY		24.50	10.50	\$ -	\$ 31,621	\$ 13,552	\$ 45,173
1.5	Site Grading- Excavation for Substation Pad	17,446	CY		9.00	6.00	\$ -	\$ 157,018	\$ 104,679	\$ 261,697
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,355	CY		21.00	9.00	\$ -	\$ 49,460.67	\$ 21,197.43	\$ 70,658.10
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	21,197	CY		2.40	1.60	\$ -	\$ 50,874	\$ 33,916	\$ 84,790
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,355	CY	25.00	2.40	1.60	\$ 58,882	\$ 5,653	\$ 3,768	\$ 68,303
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	26,170	SY	-	6.00	4.00	\$ -	\$ 157,019	\$ 104,679	\$ 261,698
1.11	Site Surfacing - Aggregate 6" Thick	26,170	SY	8.25	4.50	3.00	\$ 215,901	\$ 117,764	\$ 78,509	\$ 412,174
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,298	LF	13.85	13.85	6.92	\$ 17,975	\$ 17,975	\$ 8,987	\$ 44,937
1.13	30' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	149,169.60	96,000.00	45,300.00	\$ 149,170	\$ 96,000	\$ 45,300	\$ 290,470
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,025	LF	2.41	3.16	0.72	\$ 4,880	\$ 6,399	\$ 1,458	\$ 12,737
1.18	Temporary fencing	1,350	LF	7.50	5.25	2.25	\$ 10,125	\$ 7,088	\$ 3,038	\$ 20,250
1.19	Substation entrance with asphalt	778	SY	19.50	26.00	19.50	\$ 15,167	\$ 20,222	\$ 15,167	\$ 50,556
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	965	LF	156.00	117.00	117.00	\$ 150,540	\$ 112,905	\$ 112,905	\$ 376,350
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 691,550	\$ 928,374	\$ 609,480	\$ 2,229,404
2. SUBSTATION FOUNDATIONS										
2.1	345kv, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'-one bay	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.3	345kV, A Frame 70'-two bay	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.4	345kV, Bus support-3 Ph	380	CY	703.89	804.44	502.78	\$ 267,589	\$ 305,816	\$ 191,135	\$ 764,540
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	523	CY	703.89	804.44	502.78	\$ 367,935	\$ 420,497	\$ 262,811	\$ 1,051,242
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	106	CY	703.89	804.44	502.78	\$ 74,330	\$ 84,949	\$ 53,093	\$ 212,372
2.14	345kV, CCVT	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.15	345kV, Disconnect Switch	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.18	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.21	345kV, Circuit Breaker (PASS)	260	CY	703.89	804.44	502.78	\$ 183,010	\$ 209,154	\$ 130,722	\$ 522,886
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	232	CY	703.89	804.44	502.78	\$ 163,301	\$ 186,630	\$ 116,644	\$ 466,575
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'		EA							
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 3,009,479	\$ 3,185,817	\$ 1,961,321	\$ 8,156,617
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	3	EA	48,100.00	28,860.00	19,240.00	\$ 144,300	\$ 86,580	\$ 57,720	\$ 288,600
3.3	345kV, A Frame 70'-two bay	2	EA	86,580.00	51,948.00	34,632.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
3.3	345kV, Bus support-3 Ph	24	EA	8,346.00	5,758.74	3,839.16	\$ 200,304	\$ 138,210	\$ 92,140	\$ 430,654
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	66	EA	4,810.00	2,886.00	1,924.00	\$ 317,460	\$ 190,476	\$ 126,984	\$ 634,920
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.13	345kV, CCVT	24	EA	4,810.00	2,886.00	1,924.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.14	345kV, Disconnect Switch	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	2,457	LF	25.00	184.94	123.29	\$ 61,425	\$ 454,393	\$ 302,928	\$ 818,746
3.26	AL. Bus fittings	1	LS	73,710.00	73,710.00	36,855.00	\$ 73,710	\$ 73,710	\$ 36,855	\$ 184,275

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,291,407	\$ 1,245,902	\$ 818,317	\$ 3,355,626
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	24	EA	27,144.00	5,460.00	2,340.00	\$ 651,456	\$ 131,040	\$ 56,160	\$ 838,656
4.6	345kV, CCVT	24	EA	16,900.00	15,941.99	6,832.28	\$ 405,600	\$ 382,608	\$ 163,975	\$ 952,182
4.7	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.8	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	1	EA	3,633,158.00	3,520.00	880.00	\$ 3,633,158	\$ 3,520	\$ 880	\$ 3,637,558
4.11	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	2	EA		410,025.00	175,725.00	\$ -	\$ 820,050	\$ 351,450	\$ 1,171,500
4.14	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- PAR	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.15	345kV, Circuit Breaker (PASS)	13	EA	980,000.00	57,239.00	24,531.00	\$ 12,740,000	\$ 744,107	\$ 318,903	\$ 13,803,010
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	24	EA	8,450.00	5,460.00	2,340.00	\$ 202,800	\$ 131,040	\$ 56,160	\$ 390,000
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 37,521,801	\$ 3,233,597	\$ 1,433,416	\$ 42,188,813
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	85,500	LF	5.30	1.43	0.29	\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	16,200	LF	11.15	10.80	5.40	\$ 180,630	\$ 174,960	\$ 87,480	\$ 443,070
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	875	LF	266.50	53.04	13.26	\$ 233,188	\$ 46,410	\$ 11,603	\$ 291,200
6.7	345kV UG- Conduit	1,800	LF	230.08	133.40	55.96	\$ 414,140	\$ 240,122	\$ 100,726	\$ 754,988
6.8	345kV UG- Cable	6,600	LF	175.00	105.00	70.00	\$ 1,155,000	\$ 693,000	\$ 462,000	\$ 2,310,000
6.9	345kV UG- Termination	18	EA	27,144.00	9,048.00	6,032.00	\$ 488,592	\$ 162,864	\$ 108,576	\$ 760,032
6.10	Fiber Optic Cable	1,800	LF	7.40	3.33	2.22	\$ 13,315	\$ 5,995	\$ 3,997	\$ 23,306
6.11	Ground Continuity Conductor	1,800	LF	13.04	7.53	5.02	\$ 23,470	\$ 13,549	\$ 9,032	\$ 46,051
6.12	138kV UG- Conduit	0	LF				\$ -	\$ -	\$ -	\$ -
6.13	138kV UG- Cable	0	LF				\$ -	\$ -	\$ -	\$ -
6.14	138kV UG- Termination	0	EA							
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,508,334	\$ 1,336,900	\$ 783,414	\$ 4,628,648
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,760	LF	2.09	3.42	1.46	\$ 45,500	\$ 74,317	\$ 31,850	\$ 151,667
7.2	Caweld, DSA, 4/0 , T, CROSS	578	EA	165.00	75.00		\$ 95,370	\$ 43,350	\$ -	\$ 138,720
7.3	Ground Rod, 3/4" x 15'	528	EA	135.00	67.50	7.50	\$ 71,280	\$ 35,640	\$ 3,960	\$ 110,880
TOTAL - GROUND GRID							\$ 212,150	\$ 153,307	\$ 35,810	\$ 401,267
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	356,309.62	249,416.73	106,892.89	\$ 356,310	\$ 249,417	\$ 106,893	\$ 712,619
8.2	Primary Line Relays (Pilot): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (Pilot): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator,	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,514,278	\$ 1,228,091	\$ 405,187	\$ 3,147,556
13 - Existing EGC 345 kV_ Upgrade							\$ 47,201,935	\$ 11,434,467	\$ 6,071,439	\$ 64,707,842
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		612,706.74	262,588.60	\$ -	\$ 612,707	\$ 262,589	\$ 875,295
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,588,313.67		\$ -	\$ 2,588,314	\$ -	\$ 2,588,314
9.4	Utility PM and Project Oversight	1.0	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.5	Site Accommodation, Facilities, Storage	1.0	LS	647,078.42			\$ 647,078	\$ -	\$ -	\$ 647,078
	Engineering									
9.6	Design Engineering	1.00	LS		5,176,627.33		\$ -	\$ 5,176,627	\$ -	\$ 5,176,627
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		452,954.89		\$ -	\$ 452,955	\$ -	\$ 452,955
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,426,544.06		\$ -	\$ 2,426,544	\$ -	\$ 2,426,544
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		194,123.52		\$ -	\$ 194,124	\$ -	\$ 194,124
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			27,000,000.00	\$ -	\$ -	\$ 27,000,000	\$ 27,000,000
9.17	Legal Fees (Real estate)	1.00	LS		-	810,000.00	\$ -	\$ -	\$ 810,000	\$ 810,000
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,220,000	\$ -	\$ -	\$ 3,220,000	\$ 3,220,000
9.20	Sales Tax on Materials	8.80%	LS	47,201,934.73			\$ 4,153,770	\$ -	\$ -	\$ 4,153,770
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		64,707.84		\$ -	\$ 64,708	\$ -	\$ 64,708
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,800,849	\$ 13,477,410	\$ 31,301,689	\$ 49,579,948

Propel NY - TO51 AS5

14 -Existing Syosset 138 kV Interconnection

Total: \$ 23,416,431

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
14 -Existing Syosset 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES	\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPTMENT	\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID	\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015
SUBTOTAL (Costs):	\$ 12,068,481	\$ 3,441,070	\$ 1,027,476	\$ 16,537,028
CONTRACTOR MARK-UP (OH&P)	\$ 2,172,327	\$ 619,393	\$ 184,946	\$ 2,976,665
SUBTOTAL:	\$ 14,240,808	\$ 4,060,463	\$ 1,212,422	\$ 19,513,693
CONTINGENCY ON ENTIRE PROJECT	\$ 2,848,162	\$ 812,093	\$ 242,484	\$ 3,902,739
TOTAL:	\$ 17,088,969	\$ 4,872,555	\$ 1,454,907	\$ 23,416,431

Description of Work: Interconnection Facilities to the existing LIPA Syosset Substation, located in the Hamlet of Syosset, Town of Oyster Bay, Nassau County. Syosset Substation is a 138 kV AIS substation with an eight (8) ring bus configuration. The Solution includes the installation of a new underground 138 kV line with a PAR in an existing spare line position.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 -Existing Syosset 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.20	138kV, Surge arrester	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	81	LF	25.00	184.94	123.29	\$ 2,025	\$ 14,980	\$ 9,987	\$ 26,992

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.26	AL. Bus fittings	1	LS	2,430.00	2,430.00	1,215.00	\$ 2,430	\$ 2,430	\$ 1,215	\$ 6,075
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,087,382.00	3,520.00	880.00	\$ 10,087,382	\$ 3,520	\$ 880	\$ 10,091,782
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.23	138kV, CCVT	3	EA	10,000.00	7,970.08	3,415.75	\$ 30,000	\$ 23,910	\$ 10,247	\$ 64,158
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	792	LF	2.09	3.42	1.46	\$ 1,656	\$ 2,705	\$ 1,159	\$ 5,520
7.2	Caweld, DSA, 4/0 , T, CROSS	41	EA	165.00	75.00		\$ 6,765	\$ 3,075	\$ -	\$ 9,840
7.3	Ground Rod, 3/4" x 15'	12	EA	135.00	67.50	7.50	\$ 1,620	\$ 810	\$ 90	\$ 2,520
TOTAL - GROUND GRID		-					\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (Pilot): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
14 -Existing Syosset 138 kV_ Interconnection							\$ 10,978,337	\$ 908,544	\$ 518,131	\$ 12,405,013
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		49,933.65	21,400.14	\$ -	\$ 49,934	\$ 21,400	\$ 71,334
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		496,200.52		\$ -	\$ 496,201	\$ -	\$ 496,201
9.4	Utility PM and Project Oversight	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.5	Site Accommodation, Facilities, Storage	1.0	LS	124,050.13			\$ 124,050	\$ -	\$ -	\$ 124,050
	Engineering									
9.6	Design Engineering	1.00	LS		992,401.04		\$ -	\$ 992,401	\$ -	\$ 992,401
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		86,835.09		\$ -	\$ 86,835	\$ -	\$ 86,835
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		465,187.99		\$ -	\$ 465,188	\$ -	\$ 465,188
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		37,215.04		\$ -	\$ 37,215	\$ -	\$ 37,215
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			18,296.00	\$ -	\$ -	\$ 18,296	\$ 18,296
9.17	Legal Fees (Real estate)	1.00	LS		-	548.88	\$ -	\$ -	\$ 549	\$ 549
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 460,000	\$ -	\$ -	\$ 460,000	\$ 460,000
9.20	Sales Tax on Materials	8.80%	LS	10,978,337.32			\$ 966,094	\$ -	\$ -	\$ 966,094
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,405.01		\$ -	\$ 12,405	\$ -	\$ 12,405
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015

Propel NY - TO51 AS5

15 - Existing Northport 138 Kv Upgrade

Total: \$ 33,462,730

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
15 - Existing Northport 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS	\$ 1,159,472	\$ 491,282	\$ 345,452	\$ 1,996,206
3. SUBSTATION STRUCTURES	\$ 229,721	\$ 168,345	\$ 98,884	\$ 496,949
4. MAJOR EQUIPMENT	\$ 11,364,886	\$ 536,099	\$ 316,271	\$ 12,217,256
5. LOW VOLTAGE & CONTROL CABLE	\$ 90,587	\$ 24,496	\$ 4,899	\$ 119,982
6. CONDUIT & CABLE TRENCH	\$ 1,198,019	\$ 895,158	\$ 472,688	\$ 2,565,865
7. GROUND GRID	\$ 10,729	\$ 6,948	\$ 1,296	\$ 18,972
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,424,873	\$ 3,645,459	\$ 870,372	\$ 5,940,704
SUBTOTAL (Costs):	\$ 15,606,256	\$ 5,882,162	\$ 2,143,455	\$ 23,631,872
CONTRACTOR MARK-UP (OH&P)	\$ 2,809,126	\$ 1,058,789	\$ 385,822	\$ 4,253,737
SUBTOTAL:	\$ 18,415,382	\$ 6,940,951	\$ 2,529,276	\$ 27,885,609
CONTINGENCY ON ENTIRE PROJECT	\$ 3,683,076	\$ 1,388,190	\$ 505,855	\$ 5,577,122
TOTAL:	\$ 22,098,458	\$ 8,329,141	\$ 3,035,132	\$ 33,462,730

Description of Work: Upgrades to the existing LIPA 138 kV Northport Substation, located in the Village of Northport in the Town of Huntington, Suffolk County. Northport Substation is an existing 138 kV AIS substation with a main-tie main configuration.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
15 - Existing Northport 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	13	CY	703.89	804.44	502.78	\$ 9,385	\$ 10,726	\$ 6,704	\$ 26,815
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	97	CY	703.89	804.44	502.78	\$ 68,249	\$ 77,999	\$ 48,749	\$ 194,996
2.27	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	48	EA	18,000.00	3,200.00	2,800.00	\$ 864,000	\$ 153,600	\$ 134,400	\$ 1,152,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,159,472	\$ 491,282	\$ 345,452	\$ 1,996,206
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	4	EA	5,694.00	3,928.86	2,619.24	\$ 22,776	\$ 15,715	\$ 10,477	\$ 48,968
3.18	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	260	LF	25.00	184.94	123.29	\$ 6,500	\$ 48,084	\$ 32,056	\$ 86,640

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	AL. Bus fittings	1	LS	7,800.00	7,800.00	3,900.00	\$ 7,800	\$ 7,800	\$ 3,900	\$ 19,500
3.25	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 229,721	\$ 168,345	\$ 98,884	\$ 496,949
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,087,382.00	3,520.00	880.00	\$ 10,087,382	\$ 3,520	\$ 880	\$ 10,091,782
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		381,400.00	250,600.00	\$ -	\$ 381,400	\$ 250,600	\$ 632,000
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Circuit Breaker (PASS)- Exisitng Relocation (CB1460)	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch	4	EA	37,700.00	11,875.50	5,089.50	\$ 150,800	\$ 47,502	\$ 20,358	\$ 218,660
4.23	138kV, Cable sealing end	12	EA	4,446.00	1,050.00	450.00	\$ 53,352	\$ 12,600	\$ 5,400	\$ 71,352
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 11,364,886	\$ 536,099	\$ 316,271	\$ 12,217,256

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	17,100	LF	5.30	1.43	0.29	\$ 90,587	\$ 24,496	\$ 4,899	\$ 119,982
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 90,587	\$ 24,496	\$ 4,899	\$ 119,982
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,000	LF	11.15	10.80	5.40	\$ 33,450	\$ 32,400	\$ 16,200	\$ 82,050
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	3,750	LF	3.95	10.80	5.40	\$ 14,813	\$ 40,500	\$ 20,250	\$ 75,563
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	138kV UG- Conduit	1,000	LF	81.00	107.00	57.00	\$ 81,000	\$ 107,000	\$ 57,000	\$ 245,000
6.8	138kV UG- Cable	6,000	LF	156.00	94.00	62.00	\$ 936,000	\$ 564,000	\$ 372,000	\$ 1,872,000
6.9	138kV UG- Termination	12	EA	9,360.00	11,700.00		\$ 112,320	\$ 140,400	\$ -	\$ 252,720
6.10	Fiber Optic Cable	1,000	LF	7.40	3.33	2.22	\$ 7,397	\$ 3,331	\$ 2,220	\$ 12,948
6.11	Ground Continuity Conductor	1,000	LF	13.04	7.53	5.02	\$ 13,039	\$ 7,527	\$ 5,018	\$ 25,584
6.12							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,198,019	\$ 895,158	\$ 472,688	\$ 2,565,865
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	798	LF	2.09	3.42	1.46	\$ 1,669	\$ 2,725	\$ 1,168	\$ 5,562
7.2	Caweld, DSA, 4/0 , T, CROSS	41	EA	165.00	75.00		\$ 6,765	\$ 3,075	\$ -	\$ 9,840
7.3	Ground Rod, 3/4" x 15'	17	EA	135.00	67.50	7.50	\$ 2,295	\$ 1,148	\$ 128	\$ 3,570
TOTAL - GROUND GRID		-					\$ 10,729	\$ 6,948	\$ 1,296	\$ 18,972
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
15 - Existing Northport 138 Kv_ Upgrade							\$ 14,181,382	\$ 2,236,702	\$ 1,273,083	\$ 17,691,168
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		122,842.48	52,646.78	\$ -	\$ 122,842	\$ 52,647	\$ 175,489
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		176,911.68		\$ -	\$ 176,912	\$ -	\$ 176,912
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		707,646.70		\$ -	\$ 707,647	\$ -	\$ 707,647
9.4	Utility PM and Project Oversight	1.0	LS		176,911.68		\$ -	\$ 176,912	\$ -	\$ 176,912
9.5	Site Accommodation, Facilities, Storage	1.0	LS	176,911.68			\$ 176,912	\$ -	\$ -	\$ 176,912
	Engineering									
9.6	Design Engineering	1.00	LS		1,415,293.40		\$ -	\$ 1,415,293	\$ -	\$ 1,415,293
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		123,838.17		\$ -	\$ 123,838	\$ -	\$ 123,838
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		663,418.78		\$ -	\$ 663,419	\$ -	\$ 663,419
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,911.68		\$ -	\$ 176,912	\$ -	\$ 176,912
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,073.50		\$ -	\$ 53,074	\$ -	\$ 53,074
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			146,063.00	\$ -	\$ -	\$ 146,063	\$ 146,063
9.17	Legal Fees (Real estate)	1.00	LS		-	4,381.89	\$ -	\$ -	\$ 4,382	\$ 4,382
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.19	Bonds	1	LS		-	\$ 660,000	\$ -	\$ -	\$ 660,000	\$ 660,000
9.20	Sales Tax on Materials	8.80%	LS	14,181,382.27			\$ 1,247,962	\$ -	\$ -	\$ 1,247,962
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		17,691.17		\$ -	\$ 17,691	\$ -	\$ 17,691
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,424,873	\$ 3,645,459	\$ 870,372	\$ 5,940,704

Propel NY - TO51 AS5

16- Existing Oakwood 138 Kv Upgrade

Total: \$ 2,224,926

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
16- Existing Oakwood 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 22,026	\$ 23,246	\$ 12,440	\$ 57,712
2. SUBSTATION FOUNDATIONS	\$ 51,316	\$ 58,647	\$ 36,655	\$ 146,618
3. SUBSTATION STRUCTURES	\$ 31,394	\$ 24,807	\$ 16,388	\$ 72,589
4. MAJOR EQUIPMENT	\$ 587,714	\$ 53,785	\$ 23,051	\$ 664,549
5. LOW VOLTAGE & CONTROL CABLE	\$ 23,839	\$ 6,446	\$ 1,289	\$ 31,574
6. CONDUIT & CABLE TRENCH	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID	\$ 6,124	\$ 4,115	\$ 819	\$ 11,058
8. CONTROL ENCLOSURE	\$ 83,151	\$ 66,521	\$ 16,630	\$ 166,302
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 83,335	\$ 258,571	\$ 58,455	\$ 400,361
SUBTOTAL (Costs):	\$ 897,261	\$ 504,237	\$ 169,777	\$ 1,571,275
CONTRACTOR MARK-UP (OH&P)	\$ 161,507	\$ 90,763	\$ 30,560	\$ 282,830
SUBTOTAL:	\$ 1,058,768	\$ 595,000	\$ 200,336	\$ 1,854,105
CONTINGENCY ON ENTIRE PROJECT	\$ 211,754	\$ 119,000	\$ 40,067	\$ 370,821
TOTAL:	\$ 1,270,522	\$ 714,000	\$ 240,404	\$ 2,224,926

Description of Work: Upgrades to the existing LIPA Oakwood Substation, located in the Hamlet of West Hills in the Town of Huntington in Suffolk County. Oakwood Substation is a 138 KV AIS substation with a 2-bus configuration with a tie breaker. The proposed Solution will re-classify the existing Greenlawn feeder pothead stand and connection as the second leg of the upgraded 2-cable circuit configuration from Oakwood to Syosset circuit and connect the re-classified Oakwood to Syosset second leg to the station via installation of a PASS circuit breaker. The Solution will also remove the existing aerial to underground connection for the existing Greenlawn to Syosset circuit, then install a new Greenlawn to Syosset Transition underground to overhead connection at an alternate location adjacent to the station. The additional circuit to be installed will connect to this revised connection point

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16- Existing Oakwood 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 927	\$ 618	\$ 1,545
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	138	CY		24.50	10.50	\$ -	\$ 3,393	\$ 1,454	\$ 4,847
1.5	Site Grading- Excavation for Substation Pad	415	CY		9.00	6.00	\$ -	\$ 3,739	\$ 2,493	\$ 6,232
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	224	CY		21.00	9.00	\$ -	\$ 4,711.14	\$ 2,019.06	\$ 6,730.20
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	337	CY		2.40	1.60	\$ -	\$ 808	\$ 538	\$ 1,346
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	224	CY	25.00	2.40	1.60	\$ 5,609	\$ 538	\$ 359	\$ 6,506
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	415	SY	11.00	6.00	4.00	\$ 4,570	\$ 2,493	\$ 1,662	\$ 8,724
1.11	Site Surfacing - Aggregate 6" Thick	415	SY	16.50	4.50	3.00	\$ 6,855	\$ 1,870	\$ 1,246	\$ 9,971
1.12	7' Station Fence w/ Barbed Wire & Grounding	200	LF	13.85	13.85	6.92	\$ 2,770	\$ 2,770	\$ 1,385	\$ 6,924
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	300	LF	2.41	3.16	0.72	\$ 723	\$ 948	\$ 216	\$ 1,887
1.18	Temporary fencing	200	LF	7.50	5.25	2.25	\$ 1,500	\$ 1,050	\$ 450	\$ 3,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 22,026	\$ 23,246	\$ 12,440	\$ 57,712
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA							
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 51,316	\$ 58,647	\$ 36,655	\$ 146,618
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	1	EA	5,694.00	3,928.86	2,619.24	\$ 5,694	\$ 3,929	\$ 2,619	\$ 12,242
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	30	LF	25.00	184.94	123.29	\$ 750	\$ 5,548	\$ 3,699	\$ 9,997
3.24	AL. Bus fittings	1	LS	900.00	900.00	450.00	\$ 900	\$ 900	\$ 450	\$ 2,250
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 31,394	\$ 24,807	\$ 16,388	\$ 72,589
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	1	EA	37,700.00	11,875.50	5,089.50	\$ 37,700	\$ 11,876	\$ 5,090	\$ 54,665
4.22	138kV, Cable sealing end	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.23	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 587,714	\$ 53,785	\$ 23,051	\$ 664,549

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,500	LF	5.30	1.43	0.29	\$ 23,839	\$ 6,446	\$ 1,289	\$ 31,574
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 23,839	\$ 6,446	\$ 1,289	\$ 31,574
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	750	LF	11.15	10.80	5.40	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF				\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF				\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	521	LF	2.09	3.42	1.46	\$ 1,090	\$ 1,780	\$ 763	\$ 3,633
7.2	Caweld, DSA, 4/0 , T, CROSS	24	EA	165.00	75.00		\$ 4,022	\$ 1,828	\$ -	\$ 5,850
7.3	Ground Rod, 3/4" x 15'	8	EA	135.00	67.50	7.50	\$ 1,013	\$ 506	\$ 56	\$ 1,575
TOTAL - GROUND GRID		-					\$ 6,124	\$ 4,115	\$ 819	\$ 11,058
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	41,575.50	33,260.40	8,315.10	\$ 41,576	\$ 33,260	\$ 8,315	\$ 83,151
8.3	Backup Line Relays (Pilot): GE L90	1	EA	41,575.50	33,260.40	8,315.10	\$ 41,576	\$ 33,260	\$ 8,315	\$ 83,151
8.4	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.5	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.6	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 83,151	\$ 66,521	\$ 16,630	\$ 166,302
16- Existing Oakwood 138 Kv_ Upgrade							\$ 813,927	\$ 245,666	\$ 111,322	\$ 1,170,915
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		12,494.58	5,354.82	\$ -	\$ 12,495	\$ 5,355	\$ 17,849
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		11,709.15		\$ -	\$ 11,709	\$ -	\$ 11,709
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		46,836.59		\$ -	\$ 46,837	\$ -	\$ 46,837
9.4	Utility PM and Project Oversight	1.0	LS		11,709.15		\$ -	\$ 11,709	\$ -	\$ 11,709
9.5	Site Accommodation, Facilities, Storage	1.0	LS	11,709.15			\$ 11,709	\$ -	\$ -	\$ 11,709
	Engineering									
9.6	Design Engineering	1.00	LS		93,673.17		\$ -	\$ 93,673	\$ -	\$ 93,673
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		8,196.40		\$ -	\$ 8,196	\$ -	\$ 8,196
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		43,909.30		\$ -	\$ 43,909	\$ -	\$ 43,909
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		11,709.15		\$ -	\$ 11,709	\$ -	\$ 11,709
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,512.74		\$ -	\$ 3,513	\$ -	\$ 3,513
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 44,000	\$ -	\$ -	\$ 44,000	\$ 44,000
9.20	Sales Tax on Materials	8.80%	LS	813,926.73			\$ 71,626	\$ -	\$ -	\$ 71,626
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,170.91		\$ -	\$ 1,171	\$ -	\$ 1,171
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 83,335	\$ 258,571	\$ 58,455	\$ 400,361

Propel NY - TO51 AS5

17 -Existing Syosset 138 Kv Transition Station

Total: \$ 2,353,243

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
17 -Existing Syosset 138 Kv_ Transition Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 178,386	\$ 203,869	\$ 127,418	\$ 509,673.07
3. SUBSTATION STRUCTURES	\$ 122,136	\$ 165,238	\$ 107,773	\$ 395,147.14
4. MAJOR EQUIPMENT	\$ 179,790	\$ 79,727	\$ 34,169	\$ 293,685.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 9,536	\$ 2,579	\$ 516	\$ 12,629.70
6. CONDUIT & CABLE TRENCH	\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,307.50
7. GROUND GRID	\$ 14,992	\$ 10,073	\$ 2,005	\$ 27,070.26
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 57,373	\$ 287,800	\$ 66,210	\$ 411,382.09
SUBTOTAL (Costs):	\$ 567,229	\$ 754,144	\$ 340,521	\$ 1,661,895
CONTRACTOR MARK-UP (OH&P)	\$ 102,101	\$ 135,746	\$ 61,294	\$ 299,141
SUBTOTAL:	\$ 669,331	\$ 889,890	\$ 401,815	\$ 1,961,036
CONTINGENCY ON ENTIRE PROJECT	\$ 133,866	\$ 177,978	\$ 80,363	\$ 392,207
TOTAL:	\$ 803,197	\$ 1,067,868	\$ 482,178	\$ 2,353,243

Description of Work: I Upgrades to the existing LIPA Syosset Transition Station, located near Woodbury Road in the Hamlet of Woodbury in the Town of Oyster Bay in Nassau County. Syosset Transition Station is a 138 KV underground to overhead transition station with two (2) transition pothead stands.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
17 -Existing Syosset 138 Kv_ Transition Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	36	CY	703.89	804.44	502.78	\$ 25,072	\$ 28,654	\$ 17,909	\$ 71,635
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.25	138kV, Bus support-1 Ph, low	41	CY	703.89	804.44	502.78	\$ 28,578	\$ 32,660	\$ 20,413	\$ 81,651
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA							
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 178,386	\$ 203,869	\$ 127,418	\$ 509,673
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	2	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	3	EA	4,173.00	1,919.76	1,919.84	\$ 12,519	\$ 8,639	\$ 5,760	\$ 26,918
3.16	138kV, Bus support-1 Ph, low	10	EA	2,782.00	1,919.84	1,279.89	\$ 27,820	\$ 19,198	\$ 12,799	\$ 59,817
3.17	138kV, Disconnect Switch	3	EA	5,694.00	3,928.86	2,619.24	\$ 17,082	\$ 11,787	\$ 7,858	\$ 36,726
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	9	EA	3,206.67	1,924.00	1,282.67	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	477	LF	25.00	184.94	123.29	\$ 11,925	\$ 88,215	\$ 58,810	\$ 158,951

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	AL. Bus fittings	1	LS	14,310.00	14,310.00	7,155.00	\$ 14,310	\$ 14,310	\$ 7,155	\$ 35,775
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 122,136	\$ 165,238	\$ 107,773	\$ 395,147
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 179,790	\$ 79,727	\$ 34,169	\$ 293,685

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	1,800	LF	5.30	1.43	0.29	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	450	LF	11.15	10.80	5.40	\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,308
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,308
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,276	LF	2.09	3.42	1.46	\$ 2,668	\$ 4,358	\$ 1,868	\$ 8,894
7.2	Caweld, DSA, 4/0 , T, CROSS	60	EA	165.00	75.00		\$ 9,846	\$ 4,475	\$ -	\$ 14,321
7.3	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,479	\$ 1,239	\$ 138	\$ 3,856
TOTAL - GROUND GRID		-					\$ 14,992	\$ 10,073	\$ 2,005	\$ 27,070
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (Pilot): GE L90	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.4	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.5	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.6	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
17 -Existing Syosset 138 Kv_ Transition Station							\$ 509,857	\$ 466,344	\$ 274,311	\$ 1,250,513
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,922.95	11,109.84	\$ -	\$ 25,923	\$ 11,110	\$ 37,033
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		12,505.13		\$ -	\$ 12,505	\$ -	\$ 12,505
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		50,020.51		\$ -	\$ 50,021	\$ -	\$ 50,021
9.4	Utility PM and Project Oversite	1.0	LS		12,505.13		\$ -	\$ 12,505	\$ -	\$ 12,505
9.5	Site Accommodation, Facilities, Storage	1.0	LS	12,505.13			\$ 12,505	\$ -	\$ -	\$ 12,505
	Engineering									
9.6	Design Engineering	1.00	LS		100,041.01		\$ -	\$ 100,041	\$ -	\$ 100,041
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		8,753.59		\$ -	\$ 8,754	\$ -	\$ 8,754
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		46,894.23		\$ -	\$ 46,894	\$ -	\$ 46,894
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		12,505.13		\$ -	\$ 12,505	\$ -	\$ 12,505
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,751.54		\$ -	\$ 3,752	\$ -	\$ 3,752
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 46,000	\$ -	\$ -	\$ 46,000	\$ 46,000
9.20	Sales Tax on Materials	8.80%	LS	509,856.88			\$ 44,867	\$ -	\$ -	\$ 44,867
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,250.51		\$ -	\$ 1,251	\$ -	\$ 1,251
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 57,373	\$ 287,800	\$ 66,210	\$ 411,382

Propel NY - TO51 AS5

AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit

Total: \$ 178,777,122

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,185,984	\$ 10,763,750	\$ 4,301,834	\$ 17,251,568
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 12,723,086	\$ 12,194,981	\$ 7,877,550	\$ 32,795,618
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,508,207	\$ 15,377,038	\$ 9,804,979	\$ 50,690,224
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,596,428	\$ 15,849,300	\$ 5,071,891	\$ 25,517,620
SUBTOTAL (Costs):	\$ 45,013,705	\$ 54,185,070	\$ 27,056,254	\$ 126,255,030
CONTRACTOR MARK-UP (OH&P)	\$ 8,102,467	\$ 9,753,313	\$ 4,870,126	\$ 22,725,905
SUBTOTAL:	\$ 53,116,172	\$ 63,938,383	\$ 31,926,380	\$ 148,980,935
CONTINGENCY ON ENTIRE PROJECT	\$ 10,623,234	\$ 12,787,677	\$ 6,385,276	\$ 29,796,187
TOTAL:	\$ 63,739,406	\$ 76,726,059	\$ 38,311,656	\$ 178,777,122

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.

Barrett to EGC section is 8.76 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.76	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 6,132,000	\$ 2,628,000	\$ 8,760,000
1.3	Flaggers	280	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 448,000	\$ 1,344,000	\$ 448,000	\$ 2,240,000
1.4	K Rail / Lane Control / Metal Plates	46,253	LF	\$ 30	\$ 18	\$ 12	\$ 1,387,584	\$ 832,550	\$ 555,034	\$ 2,775,168
1.5	Police Support	11,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,344,000	\$ 302,400	\$ 1,646,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.76	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 350,400	\$ 1,051,200	\$ 350,400	\$ 1,752,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,185,984	\$ 10,763,750	\$ 4,301,834	\$ 17,251,568
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.76	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,224,648	\$ 816,432	\$ 2,041,080
2.2	Formwork in Trench	358,646	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 717,293	\$ 537,970	\$ 179,323	\$ 1,434,586
2.3	Trench Excavation	30,950	CY		\$ 17.5	\$ 7.5	\$ -	\$ 541,622	\$ 232,124	\$ 773,746
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,934	SF	\$ 50	\$ 25	\$ 14	\$ 96,718	\$ 47,392	\$ 27,081	\$ 171,191
2.5	Supply & Install Thermal Backfill	17,086	CY	\$ 350	\$ 245	\$ 105	\$ 5,979,931	\$ 4,185,951	\$ 1,793,979	\$ 11,959,861
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,904	CY	\$ 200	\$ 125	\$ 50	\$ 1,380,789	\$ 862,993	\$ 345,197	\$ 2,588,979
2.9	Conduit 8" HDPE	138,758	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 2,850,098	\$ 786,760	\$ 337,183	\$ 3,974,041
2.10	Conduit 4" HDPE	46,253	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 248,378	\$ 194,262	\$ 83,255	\$ 525,894
2.11	Conduit 2" HDPE	46,253	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 88,343	\$ 145,696	\$ 62,441	\$ 296,480
2.12	Warning Tape	46,253	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,938	\$ 11,563	\$ 4,625	\$ 23,126
2.13	Trench Box Shoring (Vault)	31	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 560,452	\$ 840,678	\$ 1,401,130
2.14	Splice Vault Excavation	10,075	CY		\$ 17.5	\$ 7.5	\$ -	\$ 176,313	\$ 75,563	\$ 251,875
2.15	Splice Vault Supply & Installation	31	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,085,000	\$ 511,500	\$ 1,193,500	\$ 2,790,000
2.16	Splice Vault Backfill	3,023	CY		\$ 14.0	\$ 6.0	\$ -	\$ 42,315	\$ 18,135	\$ 60,450
2.17	Jack and Bore along Route	104	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 83,200	\$ 166,400	\$ 166,400	\$ 416,000
2.18	HDD along Route	233	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 186,400	\$ 372,800	\$ 372,800	\$ 932,000
2.19	Air Test Ducts	231,264	LF			\$ 0.25	\$ -	\$ -	\$ 57,816	\$ 57,816

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	69	EA		\$ 400	\$ 1,200	\$ -	\$ 27,616	\$ 82,847	\$ 110,463
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	69	EA		\$ 10	\$ 15	\$ -	\$ 690	\$ 1,036	\$ 1,726
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	171	EA		\$ 400	\$ 1,200	\$ -	\$ 68,342	\$ 205,026	\$ 273,368
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 478,296	\$ 318,864	\$ -	\$ 478,296	\$ 318,864	\$ 797,160
2.26	Excess Materials Disposal to Certified Backfill	49,403	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,210,375	\$ 518,732	\$ 1,729,107
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	31	EA			\$ 4,000	\$ -	\$ -	\$ 124,000	\$ 124,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,025	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,025	\$ 20,512	\$ 61,537
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 12,723,086	\$ 12,194,981	\$ 7,877,550	\$ 32,795,618
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	145,696	FT	\$ 154	\$ 92	\$ 62	\$ 22,437,233	\$ 13,462,340	\$ 8,974,893	\$ 44,874,467
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	93	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,090,146	\$ 763,102	\$ 218,029	\$ 2,071,277
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	31	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 821,514	\$ 575,060	\$ 246,454	\$ 1,643,028
3.11	Fiber Optic Cable	48,565	FT	\$ 7	\$ 3	\$ 2	\$ 359,239	\$ 161,752	\$ 107,835	\$ 628,825
3.12	Ground Continuity Conductor	48,565	FT	\$ 13	\$ 8	\$ 5	\$ 633,245	\$ 365,552	\$ 243,701	\$ 1,242,498
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,508,207	\$ 15,377,038	\$ 9,804,979	\$ 50,690,224
AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit							\$ 40,417,277	\$ 38,335,770	\$ 21,984,363	\$ 100,737,410
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,809,604	\$ 1,206,403	\$ -	\$ 1,809,604	\$ 1,206,403	\$ 3,016,007
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,007,374.10		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,029,496.40		\$ -	\$ 4,029,496	\$ -	\$ 4,029,496
4.4	Utility PM and Project Oversight	1.0	LS		1,007,374.10		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,007,374.10			\$ 1,007,374	\$ -	\$ -	\$ 1,007,374
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,036,871	\$ -	\$ -	\$ 5,036,871	\$ -	\$ 5,036,871
4.7	LiDAR /GPR	1.0	LS		\$ 181,327	\$ 120,885	\$ -	\$ 181,327	\$ 120,885	\$ 302,212
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 423,097		\$ -	\$ 423,097	\$ -	\$ 423,097
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,007,374		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 302,212		\$ -	\$ 302,212	\$ -	\$ 302,212
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 63,579	\$ -	\$ -	\$ 63,579	\$ 63,579
4.16	Legal Fees (Real estate)	1.00	LS		-	1,907.37	\$ -	\$ -	\$ 1,907	\$ 1,907
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	2	Crossing			\$ 1,000	\$ -	\$ -	\$ 2,000	\$ 2,000
4.19	Bonds	1	LS			\$ 3,560,000	\$ -	\$ -	\$ 3,560,000	\$ 3,560,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 40,417,276.74			\$ 3,589,054	\$ -	\$ -	\$ 3,589,054
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 100,737	\$ -	\$ -	\$ 100,737	\$ 100,737
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,596,428	\$ 15,849,300	\$ 5,071,891	\$ 25,517,620

Propel NY - TO51 AS5

AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit

Total: \$ 546,334,828

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163
SUBTOTAL (Costs):	\$ 128,284,803	\$ 166,136,233	\$ 91,408,645	\$ 385,829,681
CONTRACTOR MARK-UP (OH&P)	\$ 23,091,265	\$ 29,904,522	\$ 16,453,556	\$ 69,449,343
SUBTOTAL:	\$ 151,376,067	\$ 196,040,755	\$ 107,862,202	\$ 455,279,024
CONTINGENCY ON ENTIRE PROJECT	\$ 30,275,213	\$ 39,208,151	\$ 21,572,440	\$ 91,055,805
TOTAL:	\$ 181,651,281	\$ 235,248,906	\$ 129,434,642	\$ 546,334,828

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.

Barrett to EGC section is 23.46 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	23.46	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 16,422,000	\$ 7,038,000	\$ 23,460,000
1.3	Flaggers	720	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,152,000	\$ 3,456,000	\$ 1,152,000	\$ 5,760,000
1.4	K Rail / Lane Control / Metal Plates	123,869	LF	\$ 30	\$ 18	\$ 12	\$ 3,716,064	\$ 2,229,638	\$ 1,486,426	\$ 7,432,128
1.5	Police Support	28,800.0	HR		\$ 120	\$ 27	\$ -	\$ 3,456,000	\$ 777,600	\$ 4,233,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	23.46	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 938,400	\$ 2,815,200	\$ 938,400	\$ 4,692,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	23.46	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 3,279,708	\$ 2,186,472	\$ 5,466,180
2.2	Formwork in Trench	878,054	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,756,109	\$ 1,317,082	\$ 439,027	\$ 3,512,218
2.3	Trench Excavation	75,773	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,326,025	\$ 568,296	\$ 1,894,321
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,736	SF	\$ 50	\$ 25	\$ 14	\$ 236,790	\$ 116,027	\$ 66,301	\$ 419,119
2.5	Supply & Install Thermal Backfill	41,830	CY	\$ 350	\$ 245	\$ 105	\$ 14,640,338	\$ 10,248,236	\$ 4,392,101	\$ 29,280,675
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,903	CY	\$ 200	\$ 125	\$ 50	\$ 3,380,509	\$ 2,112,818	\$ 845,127	\$ 6,338,455
2.9	Conduit 8" HDPE	371,606	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 7,632,795	\$ 2,107,008	\$ 903,004	\$ 10,642,807
2.10	Conduit 4" HDPE	123,869	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 665,175	\$ 520,249	\$ 222,964	\$ 1,408,388
2.11	Conduit 2" HDPE	123,869	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 236,589	\$ 390,187	\$ 167,223	\$ 793,999
2.12	Warning Tape	123,869	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,580	\$ 30,967	\$ 12,387	\$ 61,934
2.13	Trench Box Shoring (Vault)	80	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,446,328	\$ 2,169,492	\$ 3,615,819
2.14	Splice Vault Excavation	26,000	CY		\$ 17.5	\$ 7.5	\$ -	\$ 455,000	\$ 195,000	\$ 650,000
2.15	Splice Vault Supply & Installation	80	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,800,000	\$ 1,320,000	\$ 3,080,000	\$ 7,200,000
2.16	Splice Vault Backfill	7,800	CY		\$ 14.0	\$ 6.0	\$ -	\$ 109,200	\$ 46,800	\$ 156,000
2.17	Jack and Bore along Route	240	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 192,000	\$ 384,000	\$ 384,000	\$ 960,000
2.18	HDD along Route	11,072	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 8,857,600	\$ 17,715,200	\$ 17,715,200	\$ 44,288,000
2.19	Air Test Ducts	619,344	LF			\$ 0.25	\$ -	\$ -	\$ 154,836	\$ 154,836
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	45,810	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 641,340	\$ 641,340	\$ 320,670	\$ 1,603,351
2.21	PVMT, AGGREGATE, 10", BASE COURSE	12,725	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 284,786	\$ 299,025	\$ 128,154	\$ 711,964

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	169	EA		\$ 400	\$ 1,200	\$ -	\$ 67,610	\$ 202,831	\$ 270,441
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	169	EA		\$ 10	\$ 15	\$ -	\$ 1,690	\$ 2,535	\$ 4,226
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	418	EA		\$ 400	\$ 1,200	\$ -	\$ 167,318	\$ 501,954	\$ 669,273
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,280,916	\$ 853,944	\$ -	\$ 1,280,916	\$ 853,944	\$ 2,134,860
2.26	Excess Materials Disposal to Certified Backfill	122,165	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,993,035	\$ 1,282,729	\$ 4,275,764
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	80	EA			\$ 4,000	\$ -	\$ -	\$ 320,000	\$ 320,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	101,773	CF		\$ 1.0	\$ 0.5	\$ -	\$ 101,773	\$ 50,886	\$ 152,659
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	390,187	FT	\$ 154	\$ 92	\$ 62	\$ 60,088,755	\$ 36,053,253	\$ 24,035,502	\$ 120,177,510
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	240	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,813,280	\$ 1,969,296	\$ 562,656	\$ 5,345,232
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	80	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,120,036	\$ 1,484,025	\$ 636,011	\$ 4,240,072
3.11	Fiber Optic Cable	130,062	FT	\$ 7	\$ 3	\$ 2	\$ 962,070	\$ 433,185	\$ 288,790	\$ 1,684,046
3.12	Ground Continuity Conductor	130,062	FT	\$ 13	\$ 8	\$ 5	\$ 1,695,882	\$ 978,978	\$ 652,652	\$ 3,327,512
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit							\$ 114,995,929	\$ 117,897,551	\$ 74,830,037	\$ 307,723,518
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,781,828	\$ 3,854,552	\$ -	\$ 5,781,828	\$ 3,854,552	\$ 9,636,379
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		12,308,940.71		\$ -	\$ 12,308,941	\$ -	\$ 12,308,941
4.4	Utility PM and Project Oversight	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.5	Site Accommodation, Facilities, Storage	1.0	LS	3,077,235.18			\$ 3,077,235	\$ -	\$ -	\$ 3,077,235
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 15,386,176	\$ -	\$ -	\$ 15,386,176	\$ -	\$ 15,386,176
4.7	LiDAR /GPR	1.0	LS		\$ 553,902	\$ 369,268	\$ -	\$ 553,902	\$ 369,268	\$ 923,171
4.8	Geotech	24.0	Location		2,730.00	1,820.00	\$ -	\$ 65,520	\$ 43,680	\$ 109,200
4.9	Surveying/Staking	1	LS		\$ 1,292,439		\$ -	\$ 1,292,439	\$ -	\$ 1,292,439
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,077,235		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.12	Environmental-special studies/investigation	1	LS		\$ 175,000		\$ -	\$ 175,000	\$ -	\$ 175,000
4.13	Warranties / LOC's	1	LS		\$ 923,171		\$ -	\$ 923,171	\$ -	\$ 923,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 1,050,859	\$ -	\$ -	\$ 1,050,859	\$ 1,050,859
4.16	Legal Fees (Real estate)	1.00	LS		-	31,525.77	\$ -	\$ -	\$ 31,526	\$ 31,526
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 10,920,000	\$ -	\$ -	\$ 10,920,000	\$ 10,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 114,995,929.25			\$ 10,211,639	\$ -	\$ -	\$ 10,211,639
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 307,724	\$ -	\$ -	\$ 307,724	\$ 307,724
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163

Propel NY - TO51 AS5

AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit

Total: \$ 14,344,239

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 355,831	\$ 1,668,541	\$ 441,154	\$ 2,465,525
SUBTOTAL (Costs):	\$ 3,499,803	\$ 4,546,049	\$ 2,084,260	\$ 10,130,112
CONTRACTOR MARK-UP (OH&P)	\$ 629,965	\$ 818,289	\$ 375,167	\$ 1,823,420
SUBTOTAL:	\$ 4,129,768	\$ 5,364,338	\$ 2,459,426	\$ 11,953,532
CONTINGENCY ON ENTIRE PROJECT	\$ 825,954	\$ 1,072,868	\$ 491,885	\$ 2,390,706
TOTAL:	\$ 4,955,721	\$ 6,437,206	\$ 2,951,312	\$ 14,344,239

Description of Work: reconductoring/conversion of an existing LIPA 138 kV circuit between the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County, to the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County, via the Newbridge Road Substation in the Hamlet of East Meadow in the Town of Hempstead in Nassau County. A new 0.6 mile 345 kV line will be spliced to the existing line, creating a continuous 345 kV feed between the substations. The routing would be the existing underground routing using the LIPA-owned transmission corridors.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.63	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 441,000	\$ 189,000	\$ 630,000
1.3	Flaggers	20	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 32,000	\$ 96,000	\$ 32,000	\$ 160,000
1.4	K Rail / Lane Control / Metal Plates	3,326	LF	\$ 30	\$ 18	\$ 12	\$ 99,792	\$ 59,875	\$ 39,917	\$ 199,584
1.5	Police Support	800.0	HR		\$ 120	\$ 27	\$ -	\$ 96,000	\$ 21,600	\$ 117,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	0.63	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 25,200	\$ 75,600	\$ 25,200	\$ 126,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.63	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 88,074	\$ 58,716	\$ 146,790
2.2	Formwork in Trench	25,771	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 51,542	\$ 38,657	\$ 12,886	\$ 103,085
2.3	Trench Excavation	2,224	CY		\$ 17.5	\$ 7.5	\$ -	\$ 38,919	\$ 16,680	\$ 55,599
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	139	SF	\$ 50	\$ 25	\$ 14	\$ 6,950	\$ 3,405	\$ 1,946	\$ 12,301
2.5	Supply & Install Thermal Backfill	1,228	CY	\$ 350	\$ 245	\$ 105	\$ 429,699	\$ 300,789	\$ 128,910	\$ 859,398
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	496	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 99,219	\$ 62,012	\$ 24,805	\$ 186,036
2.9	Conduit 8" HDPE	9,979	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 204,973	\$ 56,582	\$ 24,249	\$ 285,804
2.10	Conduit 4" HDPE	3,326	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 17,863	\$ 13,971	\$ 5,988	\$ 37,821
2.11	Conduit 2" HDPE	3,326	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 6,353	\$ 10,478	\$ 4,491	\$ 21,322
2.12	Warning Tape	3,326	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 499	\$ 832	\$ 333	\$ 1,663
2.13	Trench Box Shoring (Vault)	3	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 54,237	\$ 81,356	\$ 135,593
2.14	Splice Vault Excavation	975	CY		\$ 17.5	\$ 7.5	\$ -	\$ 17,063	\$ 7,313	\$ 24,375
2.15	Splice Vault Supply & Installation	3	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 105,000	\$ 49,500	\$ 115,500	\$ 270,000
2.16	Splice Vault Backfill	293	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,095	\$ 1,755	\$ 5,850
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	16,632	LF			\$ 0.25	\$ -	\$ -	\$ 4,158	\$ 4,158

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	1,387	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 19,417	\$ 19,417	\$ 9,708	\$ 48,542
2.21	PVMT, AGGREGATE, 10", BASE COURSE	385	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 8,622	\$ 9,053	\$ 3,880	\$ 21,555
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	5	EA		\$ 400	\$ 1,200	\$ -	\$ 1,984	\$ 5,953	\$ 7,938
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	5	EA		\$ 10	\$ 15	\$ -	\$ 50	\$ 74	\$ 124
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	12	EA		\$ 400	\$ 1,200	\$ -	\$ 4,911	\$ 14,733	\$ 19,643
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 34,398	\$ 22,932	\$ -	\$ 34,398	\$ 22,932	\$ 57,330
2.26	Excess Materials Disposal to Certified Backfill	3,778	CY		\$ 24.5	\$ 10.5	\$ -	\$ 92,571	\$ 39,673	\$ 132,244
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	3	EA			\$ 4,000	\$ -	\$ -	\$ 12,000	\$ 12,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	3,199	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,199	\$ 1,599	\$ 4,798
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	10,478	FT	\$ 154	\$ 92	\$ 62	\$ 1,613,637	\$ 968,182	\$ 645,455	\$ 3,227,273
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	9	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 105,498	\$ 73,849	\$ 21,100	\$ 200,446
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	3	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 79,501	\$ 55,651	\$ 23,850	\$ 159,003
3.11	Fiber Optic Cable	3,493	FT	\$ 7	\$ 3	\$ 2	\$ 25,836	\$ 11,633	\$ 7,755	\$ 45,224
3.12	Ground Continuity Conductor	3,493	FT	\$ 13	\$ 8	\$ 5	\$ 45,542	\$ 26,290	\$ 17,526	\$ 89,358
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit							\$ 3,143,972	\$ 2,877,508	\$ 1,643,106	\$ 7,664,587
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 135,618	\$ 90,412	\$ -	\$ 135,618	\$ 90,412	\$ 226,031
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		306,583.47		\$ -	\$ 306,583	\$ -	\$ 306,583
4.4	Utility PM and Project Oversight	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.5	Site Accommodation, Facilities, Storage	1.0	LS	76,645.87			\$ 76,646	\$ -	\$ -	\$ 76,646
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 383,229	\$ -	\$ -	\$ 383,229	\$ -	\$ 383,229
4.7	LiDAR /GPR	1.0	LS		\$ 13,796	\$ 9,198	\$ -	\$ 13,796	\$ 9,198	\$ 22,994
4.8	Geotech	1.0	Location		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 53,652		\$ -	\$ 53,652	\$ -	\$ 53,652
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 76,646		\$ -	\$ 76,646	\$ -	\$ 76,646
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 22,994		\$ -	\$ 22,994	\$ -	\$ 22,994
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 50,543	\$ -	\$ -	\$ 50,543	\$ 50,543
4.16	Legal Fees (Real estate)	1.00	LS		-	1,516.29	\$ -	\$ -	\$ 1,516	\$ 1,516
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 280,000	\$ -	\$ -	\$ 280,000	\$ 280,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 3,143,972			\$ 279,185	\$ -	\$ -	\$ 279,185
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 7,665	\$ -	\$ -	\$ 7,665	\$ 7,665
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 355,831	\$ 1,668,541	\$ 441,154	\$ 2,465,525

Propel NY - TO51 AS5

AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 211,488,737

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945
SUBTOTAL (Costs):	\$ 53,010,451	\$ 64,488,496	\$ 31,857,505	\$ 149,356,453
CONTRACTOR MARK-UP (OH&P)	\$ 9,541,881	\$ 11,607,929	\$ 5,734,351	\$ 26,884,162
SUBTOTAL:	\$ 62,552,333	\$ 76,096,426	\$ 37,591,856	\$ 176,240,614
CONTINGENCY ON ENTIRE PROJECT	\$ 12,510,467	\$ 15,219,285	\$ 7,518,371	\$ 35,248,123
TOTAL:	\$ 75,062,799	\$ 91,315,711	\$ 45,110,228	\$ 211,488,737

Description of Work: The proposed 345 kV and 138 kV electric underground transmission lines extending from the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County to the Shore Road Substation in the Glenwood Landing Hamlet in Nassau County. The proposed route will be approximately 10.3 miles, utilizing 4000 kcmil XLPE cable for the route.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,175,000	\$ 3,075,000	\$ 10,250,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	54,120	LF	\$ 30	\$ 18	\$ 12	\$ 1,623,600	\$ 974,160	\$ 649,440	\$ 3,247,200
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 410,000	\$ 1,230,000	\$ 410,000	\$ 2,050,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,432,950	\$ 955,300	\$ 2,388,250
2.2	Formwork in Trench	419,712	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 839,424	\$ 629,568	\$ 209,856	\$ 1,678,848
2.3	Trench Excavation	36,220	CY		\$ 17.5	\$ 7.5	\$ -	\$ 633,843	\$ 271,647	\$ 905,490
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,264	SF	\$ 50	\$ 25	\$ 14	\$ 113,186	\$ 55,461	\$ 31,692	\$ 200,340
2.5	Supply & Install Thermal Backfill	19,995	CY	\$ 350	\$ 245	\$ 105	\$ 6,998,115	\$ 4,898,680	\$ 2,099,434	\$ 13,996,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,079	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,615,891	\$ 1,009,932	\$ 403,973	\$ 3,029,796
2.9	Conduit 8" HDPE	162,360	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 3,334,874	\$ 920,581	\$ 394,535	\$ 4,649,990
2.10	Conduit 4" HDPE	54,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 290,624	\$ 227,304	\$ 97,416	\$ 615,344
2.11	Conduit 2" HDPE	54,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 103,369	\$ 170,478	\$ 73,062	\$ 346,909
2.12	Warning Tape	54,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,118	\$ 13,530	\$ 5,412	\$ 27,060
2.13	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.14	Splice Vault Excavation	11,375	CY		\$ 17.5	\$ 7.5	\$ -	\$ 199,063	\$ 85,313	\$ 284,375
2.15	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.16	Splice Vault Backfill	3,413	CY		\$ 14.0	\$ 6.0	\$ -	\$ 47,775	\$ 20,475	\$ 68,250
2.17	Jack and Bore along Route	113	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 90,400	\$ 180,800	\$ 180,800	\$ 452,000
2.18	HDD along Route	318	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 254,400	\$ 508,800	\$ 508,800	\$ 1,272,000
2.19	Air Test Ducts	270,600	LF			\$ 0.25	\$ -	\$ -	\$ 67,650	\$ 67,650

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,687	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 303,614	\$ 303,614	\$ 151,807	\$ 759,034
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,024	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 134,819	\$ 141,560	\$ 60,668	\$ 337,047
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	81	EA		\$ 400	\$ 1,200	\$ -	\$ 32,318	\$ 96,953	\$ 129,271
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	81	EA		\$ 10	\$ 15	\$ -	\$ 808	\$ 1,212	\$ 2,020
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	200	EA		\$ 400	\$ 1,200	\$ -	\$ 79,978	\$ 239,935	\$ 319,914
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 559,650	\$ 373,100	\$ -	\$ 559,650	\$ 373,100	\$ 932,750
2.26	Excess Materials Disposal to Certified Backfill	57,437	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,407,200	\$ 603,086	\$ 2,010,285
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	35	EA			\$ 4,000	\$ -	\$ -	\$ 140,000	\$ 140,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	47,595	CF		\$ 1.0	\$ 0.5	\$ -	\$ 47,595	\$ 23,797	\$ 71,392
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	170,478	FT	\$ 154	\$ 92	\$ 62	\$ 26,253,612	\$ 15,752,167	\$ 10,501,445	\$ 52,507,224
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	105	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,230,810	\$ 861,567	\$ 246,162	\$ 2,338,539
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	35	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 927,516	\$ 649,261	\$ 278,255	\$ 1,855,032
3.11	Fiber Optic Cable	56,826	FT	\$ 7	\$ 3	\$ 2	\$ 420,342	\$ 189,265	\$ 126,176	\$ 735,783
3.12	Ground Continuity Conductor	56,826	FT	\$ 13	\$ 8	\$ 5	\$ 740,954	\$ 427,729	\$ 285,153	\$ 1,453,836
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit							\$ 47,597,498	\$ 45,172,137	\$ 25,859,873	\$ 118,629,508
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,130,960	\$ 1,420,640	\$ -	\$ 2,130,960	\$ 1,420,640	\$ 3,551,600
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,745,180.33		\$ -	\$ 4,745,180	\$ -	\$ 4,745,180
4.4	Utility PM and Project Oversight	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,186,295.08			\$ 1,186,295	\$ -	\$ -	\$ 1,186,295
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,931,475	\$ -	\$ -	\$ 5,931,475	\$ -	\$ 5,931,475
4.7	LiDAR /GPR	1.0	LS		\$ 213,533	\$ 142,355	\$ -	\$ 213,533	\$ 142,355	\$ 355,889
4.8	Geotech	11.0	Location		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 830,407		\$ -	\$ 830,407	\$ -	\$ 830,407
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,186,295		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 355,889		\$ -	\$ 355,889	\$ -	\$ 355,889
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 72,803	\$ -	\$ -	\$ 72,803	\$ 72,803
4.16	Legal Fees (Real estate)	1.00	LS		-	2,184.09	\$ -	\$ -	\$ 2,184	\$ 2,184
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	100.00%	LS			\$ 4,220,000	\$ -	\$ -	\$ 4,220,000	\$ 4,220,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 47,597,498			\$ 4,226,658	\$ -	\$ -	\$ 4,226,658
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 118,630	\$ -	\$ -	\$ 118,630	\$ 118,630
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945

Propel NY - TO51 AS5

AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 359,455,633

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552
SUBTOTAL (Costs):	\$ 91,556,197	\$ 107,706,768	\$ 54,589,882	\$ 253,852,848
CONTRACTOR MARK-UP (OH&P)	\$ 16,480,115	\$ 19,387,218	\$ 9,826,179	\$ 45,693,513
SUBTOTAL:	\$ 108,036,313	\$ 127,093,987	\$ 64,416,061	\$ 299,546,360
CONTINGENCY ON ENTIRE PROJECT	\$ 21,607,263	\$ 25,418,797	\$ 12,883,212	\$ 59,909,272
TOTAL:	\$ 129,643,575	\$ 152,512,784	\$ 77,299,273	\$ 359,455,633

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	17.83	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 12,481,000	\$ 5,349,000	\$ 17,830,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	94,142	LF	\$ 30	\$ 18	\$ 12	\$ 2,824,272	\$ 1,694,563	\$ 1,129,709	\$ 5,648,544
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	17.83	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 713,200	\$ 2,139,600	\$ 713,200	\$ 3,566,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	17.83	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,492,634	\$ 1,661,756	\$ 4,154,390
2.2	Formwork in Trench	734,083	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,468,166	\$ 1,101,125	\$ 367,042	\$ 2,936,333
2.3	Trench Excavation	63,349	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,108,602	\$ 475,115	\$ 1,583,717
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,959	SF	\$ 50	\$ 25	\$ 14	\$ 197,965	\$ 97,003	\$ 55,430	\$ 350,397
2.5	Supply & Install Thermal Backfill	34,971	CY	\$ 350	\$ 245	\$ 105	\$ 12,239,818	\$ 8,567,872	\$ 3,671,945	\$ 24,479,636
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,131	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,826,220	\$ 1,766,388	\$ 706,555	\$ 5,299,163
2.9	Conduit 8" HDPE	282,427	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,801,055	\$ 1,601,362	\$ 686,298	\$ 8,088,715
2.10	Conduit 4" HDPE	94,142	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 505,545	\$ 395,398	\$ 169,456	\$ 1,070,399
2.11	Conduit 2" HDPE	94,142	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 179,812	\$ 296,549	\$ 127,092	\$ 603,453
2.12	Warning Tape	94,142	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,121	\$ 23,536	\$ 9,414	\$ 47,071
2.13	Trench Box Shoring (Vault)	62	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,120,904	\$ 1,681,356	\$ 2,802,260
2.14	Splice Vault Excavation	20,150	CY		\$ 17.5	\$ 7.5	\$ -	\$ 352,625	\$ 151,125	\$ 503,750
2.15	Splice Vault Supply & Installation	62	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,170,000	\$ 1,023,000	\$ 2,387,000	\$ 5,580,000
2.16	Splice Vault Backfill	6,045	CY		\$ 14.0	\$ 6.0	\$ -	\$ 84,630	\$ 36,270	\$ 120,900
2.17	Jack and Bore along Route	212	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 169,600	\$ 339,200	\$ 339,200	\$ 848,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	470,712	LF			\$ 0.25	\$ -	\$ -	\$ 117,678	\$ 117,678
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	37,981	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 531,739	\$ 531,739	\$ 265,869	\$ 1,329,347
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,550	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 236,117	\$ 247,923	\$ 106,253	\$ 590,293
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	141	EA		\$ 400	\$ 1,200	\$ -	\$ 56,524	\$ 169,573	\$ 226,098
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	141	EA		\$ 10	\$ 15	\$ -	\$ 1,413	\$ 2,120	\$ 3,533
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	350	EA		\$ 400	\$ 1,200	\$ -	\$ 139,884	\$ 419,651	\$ 559,535
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 973,518	\$ 649,012	\$ -	\$ 973,518	\$ 649,012	\$ 1,622,530
2.26	Excess Materials Disposal to Certified Backfill	100,690	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,466,899	\$ 1,057,242	\$ 3,524,142
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	62	EA			\$ 4,000	\$ -	\$ -	\$ 248,000	\$ 248,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	83,499	CF		\$ 1.0	\$ 0.5	\$ -	\$ 83,499	\$ 41,749	\$ 125,248
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	296,549	FT	\$ 154	\$ 92	\$ 62	\$ 45,668,478	\$ 27,401,087	\$ 18,267,391	\$ 91,336,956
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	62	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,643,028	\$ 1,150,120	\$ 492,908	\$ 3,286,056
3.11	Fiber Optic Cable	98,850	FT	\$ 7	\$ 3	\$ 2	\$ 731,190	\$ 329,228	\$ 219,485	\$ 1,279,904
3.12	Ground Continuity Conductor	98,850	FT	\$ 13	\$ 8	\$ 5	\$ 1,288,899	\$ 744,040	\$ 496,027	\$ 2,528,966
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit							\$ 82,228,347	\$ 76,499,301	\$ 43,869,648	\$ 202,597,296
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,611,068	\$ 2,407,379	\$ -	\$ 3,611,068	\$ 2,407,379	\$ 6,018,447
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		8,103,891.84		\$ -	\$ 8,103,892	\$ -	\$ 8,103,892
4.4	Utility PM and Project Oversight	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,025,972.96			\$ 2,025,973	\$ -	\$ -	\$ 2,025,973
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,129,865	\$ -	\$ -	\$ 10,129,865	\$ -	\$ 10,129,865
4.7	LiDAR /GPR	1.0	LS		\$ 364,675	\$ 243,117	\$ -	\$ 364,675	\$ 243,117	\$ 607,792
4.8	Geotech	18.0	Location		2,730.00	1,820.00	\$ -	\$ 49,140	\$ 32,760	\$ 81,900
4.9	Surveying/Staking	1	LS		\$ 850,909		\$ -	\$ 850,909	\$ -	\$ 850,909
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,025,973		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.12	Environmental-special studies/investigation	1	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 607,792	\$ -	\$ -	\$ 607,792	\$ 607,792
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 45,232	\$ -	\$ -	\$ 45,232	\$ 45,232
4.16	Legal Fees (Real estate)	1.00	LS		-	1,356.96	\$ -	\$ -	\$ 1,357	\$ 1,357
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 7,180,000	\$ -	\$ -	\$ 7,180,000	\$ 7,180,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 82,228,347			\$ 7,301,877	\$ -	\$ -	\$ 7,301,877
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 202,597	\$ -	\$ -	\$ 202,597	\$ 202,597
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552

Propel NY - TO51 AS5

AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)

Total: \$ 466,224,722

AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)				
1. SUBMARINE CABLE	\$ 83,811,284	\$ 105,456,021	\$ 71,430,310	\$ 260,697,615
2. TRANSITION STATION	\$ 1,111,500	\$ 1,104,004	\$ 1,062,536	\$ 3,278,040
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 10,112,962	\$ 39,600,811	\$ 15,565,320	\$ 65,279,093
SUBTOTAL (Costs):	\$ 95,035,745	\$ 146,160,836	\$ 88,058,167	\$ 329,254,747
CONTRACTOR MARK-UP (OH&P)	\$ 17,106,434	\$ 26,308,950	\$ 15,850,470	\$ 59,265,855
SUBTOTAL:	\$ 112,142,179	\$ 172,469,786	\$ 103,908,636	\$ 388,520,602
CONTINGENCY ON ENTIRE PROJECT	\$ 22,428,436	\$ 34,493,957	\$ 20,781,727	\$ 77,704,120
TOTAL:	\$ 134,570,615	\$ 206,963,743	\$ 124,690,364	\$ 466,224,722

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA + Vessel Install	200,492	FT	\$ 375	\$ 400	\$ 250	\$ 75,184,560	\$ 80,196,864	\$ 50,123,040	\$ 205,504,464
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 10,147,637	\$ 6,765,092	\$ -	\$ 10,147,637	\$ 6,765,092	\$ 16,912,729
1.3	Submarine Cable Splicing if Required 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	24	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 669,858	\$ 893,144	\$ 669,858	\$ 2,232,859
1.5	Outdoor Termination	24	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 669,858	\$ 893,144	\$ 669,858	\$ 2,232,859
1.6	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.7	HDD along Route	4,062	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,499,840	\$ 12,999,680	\$ 12,999,680	\$ 32,499,200
1.8	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 33,891	\$ 22,594	\$ -	\$ 33,891	\$ 22,594	\$ 56,485
1.9	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
1.10	Trench Excavation	1,612	CY		\$ 17.5	\$ 7.5	\$ -	\$ 28,207	\$ 12,089	\$ 40,296
1.11	Supply & Install 6" Sand Bedding for direct bury conduits	101	SF	\$ 50	\$ 25	\$ 14	\$ 5,037	\$ 2,468	\$ 1,410	\$ 8,916
1.13	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
1.14	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
1.15	Native Backfill -direct bury conduits sys Trench	1,371	CY		\$ 14.0	\$ 6.0	\$ -	\$ 19,194	\$ 8,226	\$ 27,420
1.16	Conduit 15" HDPE	5,120	LF	\$ 150.0	\$ 45.0	\$ 30.0	\$ 768,000	\$ 230,400	\$ 153,600	\$ 1,152,000
1.17	Conduit 4" HDPE	2,560	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 13,747	\$ 10,752	\$ 4,608	\$ 29,107
1.18	Conduit 2" HDPE	0	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
1.19	Warning Tape	2,560	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 384	\$ 640	\$ 256	\$ 1,280
TOTAL - MARINE CABLE :							\$ 83,811,284	\$ 105,456,021	\$ 71,430,310	\$ 260,697,615
2. TRANSITION STATION										
2.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,094	\$ 14,063	\$ 35,156
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	2,600	LF	7.50	5.25	2.25	\$ 19,500	\$ 13,650	\$ 5,850	\$ 39,000
2.4	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.5	Splice Vault Excavation	3,186	CY		\$ 17.5	\$ 7.5	\$ -	\$ 55,751	\$ 23,893	\$ 79,644
2.6	Splice Vault Supply & Installation	8	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 560,000	\$ 180,000	\$ 420,000	\$ 1,160,000
2.7	Splice Vault Backfill	956	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,380	\$ 5,734	\$ 19,115
2.8	Air Test Ducts	7,680	LF			\$ 0.25	\$ -	\$ -	\$ 1,920	\$ 1,920
2.9	Restoration (incl. Paving)	38,000	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 532,000	\$ 532,000	\$ 266,000	\$ 1,330,000
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill	3,212	CY		\$ 24.5	\$ 10.5	\$ -	\$ 78,698	\$ 33,728	\$ 112,426
2.15	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	4,798	CF		\$ 1.0	\$ 0.5	\$ -	\$ 4,798	\$ 2,399	\$ 7,196
2.20							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 1,111,500	\$ 1,104,004	\$ 1,062,536	\$ 3,278,040
AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)							\$ 84,922,784	\$ 106,560,025	\$ 72,492,846	\$ 263,975,655
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,639,756.55		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		10,559,026.20		\$ -	\$ 10,559,026	\$ -	\$ 10,559,026
3.4	Utility PM and Project Oversight	1.0	LS		2,639,756.55		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.5	Site Accommodation, Facilities, Storage	1.0	LS	2,639,756.55			\$ 2,639,757	\$ -	\$ -	\$ 2,639,757
	Engineering									
3.6	Design Engineering	1	LS		\$ 13,198,783		\$ -	\$ 13,198,783	\$ -	\$ 13,198,783
3.7	Surveying/Staking	1	LS		\$ 1,847,830		\$ -	\$ 1,847,830	\$ -	\$ 1,847,830
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 80,000		\$ -	\$ 80,000	\$ -	\$ 80,000
3.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,639,757		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
3.12	Warranties / LOC's	1	LS		\$ 791,927		\$ -	\$ 791,927	\$ -	\$ 791,927
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS			\$ 238,175	\$ -	\$ -	\$ 238,175	\$ 238,175
3.15	Legal Fees (Real estate)	1.00	LS		-	7,145.25	\$ -	\$ -	\$ 7,145	\$ 7,145
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Bonds	1	LS			\$ 9,320,000	\$ -	\$ -	\$ 9,320,000	\$ 9,320,000
3.18	Sales Tax on Materials	8.8%	LS	\$ 84,922,784			\$ 7,473,205	\$ -	\$ -	\$ 7,473,205
3.19	Contractor Permits	1	LS		\$ 263,976		\$ -	\$ 263,976	\$ -	\$ 263,976
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,112,962	\$ 39,600,811	\$ 15,565,320	\$ 65,279,093

Propel NY - TO51 AS5

AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)

Total: \$ 110,456,330

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 817,488	\$ 3,256,333	\$ 1,206,355	\$ 5,280,176
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 7,146,397	\$ 7,446,220	\$ 4,393,625	\$ 18,986,243
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 19,201,491	\$ 11,343,214	\$ 7,301,746	\$ 37,846,451
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,033,414	\$ 9,820,361	\$ 3,039,238	\$ 15,893,013
SUBTOTAL (Costs):	\$ 30,198,790	\$ 31,866,128	\$ 15,940,964	\$ 78,005,883
CONTRACTOR MARK-UP (OH&P)	\$ 5,435,782	\$ 5,735,903	\$ 2,869,374	\$ 14,041,059
SUBTOTAL:	\$ 35,634,573	\$ 37,602,031	\$ 18,810,338	\$ 92,046,942
CONTINGENCY ON ENTIRE PROJECT	\$ 7,126,915	\$ 7,520,406	\$ 3,762,068	\$ 18,409,388
TOTAL:	\$ 42,761,487	\$ 45,122,437	\$ 22,572,405	\$ 110,456,330

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

New Rochelle Landing to New Rochelle Station segment is 1.66 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.66	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,162,000	\$ 498,000	\$ 1,660,000
1.3	Flaggers	120	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 192,000	\$ 576,000	\$ 192,000	\$ 960,000
1.4	K Rail / Lane Control / Metal Plates	8,765	LF	\$ 60	\$ 36	\$ 24	\$ 525,888	\$ 315,533	\$ 210,355	\$ 1,051,776
1.5	Police Support	7,200.0	HR		\$ 120	\$ 27	\$ -	\$ 864,000	\$ 194,400	\$ 1,058,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	1.66	Mile	\$ 60,000	\$ 180,000	\$ 60,000	\$ 99,600	\$ 298,800	\$ 99,600	\$ 498,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 817,488	\$ 3,256,333	\$ 1,206,355	\$ 5,280,176
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y57- Line 1&2										
2.1	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.2	Formwork in Trench	68,998	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 137,997	\$ 103,498	\$ 34,499	\$ 275,994
2.3	Trench Excavation	5,106	CY		\$ 17.5	\$ 7.5	\$ -	\$ 89,353	\$ 38,294	\$ 127,647
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	532	CY	\$ 50	\$ 25	\$ 14	\$ 26,593	\$ 13,031	\$ 7,446	\$ 47,070
2.5	Supply & Install Thermal Backfill -conduit level	4,692	CY	\$ 350	\$ 245	\$ 105	\$ 1,642,330	\$ 1,149,631	\$ 492,699	\$ 3,284,659
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,640	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 328,030	\$ 205,019	\$ 82,007	\$ 615,056
2.9	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.10	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.11	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.12	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.13	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.14	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.16	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,409	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 61,733	\$ 61,733	\$ 30,866	\$ 154,332
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,225	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,412	\$ 28,783	\$ 12,336	\$ 68,531
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	16	EA		\$ 400	\$ 1,200	\$ -	\$ 6,561	\$ 19,682	\$ 26,242
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	16	EA		\$ 10	\$ 15	\$ -	\$ 164	\$ 246	\$ 410
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	47	EA		\$ 400	\$ 1,200	\$ -	\$ 18,769	\$ 56,308	\$ 75,078
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.26	Excess Materials Disposal to Certified Backfill	7,347	CY		\$ 24.5	\$ 10.5	\$ -	\$ 180,012	\$ 77,148	\$ 257,161
2.27	Rock Excavation and Removal	3,924	CY		\$ 243	\$ 162	\$ -	\$ 953,513	\$ 635,675	\$ 1,589,188
2.28	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	5,886	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,886	\$ 2,943	\$ 8,829
LINE Y58-Line 1 & 2										
2.30	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.31	Formwork in Trench	68,998	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 137,997	\$ 103,498	\$ 34,499	\$ 275,994
2.32	Trench Excavation	5,106	CY		\$ 17.5	\$ 7.5	\$ -	\$ 89,353	\$ 38,294	\$ 127,647
2.33	Supply & Install 6" Sand Bedding for direct bury conduits	532	CY	\$ 50	\$ 25	\$ 14	\$ 26,593	\$ 13,031	\$ 7,446	\$ 47,070
2.34	Supply & Install Thermal Backfill -conduit level	4,692	CY	\$ 350	\$ 245	\$ 105	\$ 1,642,330	\$ 1,149,631	\$ 492,699	\$ 3,284,659
2.35	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.36	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.37	Supply & Install Ductbank Concrete	1,640	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 328,030	\$ 205,019	\$ 82,007	\$ 615,056
2.38	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.39	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.40	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.41	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.42	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.43	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500
2.44	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.45	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.46	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.47	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.48	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.49	PVMT, ASPHALT, 2" SURFACE COURSE	4,409	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 61,733	\$ 61,733	\$ 30,866	\$ 154,332
2.50	PVMT, AGGREGATE, 10", BASE COURSE	1,225	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,412	\$ 28,783	\$ 12,336	\$ 68,531
2.51	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	16	EA		\$ 400	\$ 1,200	\$ -	\$ 6,561	\$ 19,682	\$ 26,242
2.52	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	16	EA		\$ 10	\$ 15	\$ -	\$ 164	\$ 246	\$ 410
2.53	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	47	EA		\$ 400	\$ 1,200	\$ -	\$ 18,769	\$ 56,308	\$ 75,078
2.54	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.55	Excess Materials Disposal to Certified Backfill	7,347	CY		\$ 24.5	\$ 10.5	\$ -	\$ 180,012	\$ 77,148	\$ 257,161
2.56	Rock Excavation and Removal	3,924	CY		\$ 243	\$ 162	\$ -	\$ 953,513	\$ 635,675	\$ 1,589,188
2.57	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.58	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.59	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.60	Excavated material - stockpile management	5,886	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,886	\$ 2,943	\$ 8,829
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 7,146,397	\$ 7,446,220	\$ 4,393,625	\$ 18,986,243
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Y57 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.2	Y57 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.3	Y57 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y57 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.5	Y57 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.6	Y57 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Y58 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.8	Y58 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.9	Y58 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.10	Y58 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
3.11	Y58 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.12	Y58 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.13	Link Box & MH racking	8	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 212,004	\$ 148,403	\$ 63,601	\$ 424,007
3.14	Fiber Optic Cable	36,812	FT	\$ 7	\$ 3	\$ 2	\$ 272,300	\$ 122,607	\$ 81,738	\$ 476,644
3.15	Ground Continuity Conductor	36,812	FT	\$ 13	\$ 8	\$ 5	\$ 479,994	\$ 277,085	\$ 184,723	\$ 941,802
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 19,201,491	\$ 11,343,214	\$ 7,301,746	\$ 37,846,451
AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)							\$ 27,165,376	\$ 22,045,767	\$ 12,901,726	\$ 62,112,869
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,048,425	\$ 698,950	\$ -	\$ 1,048,425	\$ 698,950	\$ 1,747,375
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		621,128.69		\$ -	\$ 621,129	\$ -	\$ 621,129
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,484,514.78		\$ -	\$ 2,484,515	\$ -	\$ 2,484,515
4.4	Utility PM and Project Oversight	1.0	LS		621,128.69		\$ -	\$ 621,129	\$ -	\$ 621,129
4.5	Site Accommodation, Facilities, Storage	1.0	LS	621,128.69			\$ 621,129	\$ -	\$ -	\$ 621,129
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,105,643	\$ -	\$ -	\$ 3,105,643	\$ -	\$ 3,105,643
4.7	LiDAR /GPR	1.0	LS		\$ 111,803	\$ 74,535	\$ -	\$ 111,803	\$ 74,535	\$ 186,339
4.8	Geotech	2.0	Location		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 434,790		\$ -	\$ 434,790	\$ -	\$ 434,790
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 80,000		\$ -	\$ 80,000	\$ -	\$ 80,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 621,129		\$ -	\$ 621,129	\$ -	\$ 621,129
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 186,339		\$ -	\$ 186,339	\$ -	\$ 186,339
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,200,000	\$ -	\$ -	\$ 2,200,000	\$ 2,200,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 27,165,376.31			\$ 2,412,285	\$ -	\$ -	\$ 2,412,285
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 62,113	\$ -	\$ -	\$ 62,113	\$ 62,113
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,033,414	\$ 9,820,361	\$ 3,039,238	\$ 15,893,013

Propel NY - TO51 AS5

AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit

Total: \$ 333,103,631

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,286,976	\$ 11,600,426	\$ 4,444,950	\$ 18,332,352
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 22,313,345	\$ 28,290,112	\$ 22,106,350	\$ 72,709,807
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 48,809,874	\$ 29,550,805	\$ 18,559,479	\$ 96,920,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 8,398,449	\$ 29,274,567	\$ 9,607,345	\$ 47,280,360
SUBTOTAL (Costs):	\$ 81,808,644	\$ 98,715,909	\$ 54,718,124	\$ 235,242,678
CONTRACTOR MARK-UP (OH&P)	\$ 14,725,556	\$ 17,768,864	\$ 9,849,262	\$ 42,343,682
SUBTOTAL:	\$ 96,534,200	\$ 116,484,773	\$ 64,567,387	\$ 277,586,359
CONTINGENCY ON ENTIRE PROJECT	\$ 19,306,840	\$ 23,296,955	\$ 12,913,477	\$ 55,517,272
TOTAL:	\$ 115,841,040	\$ 139,781,728	\$ 77,480,864	\$ 333,103,631

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.14	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,698,000	\$ 2,442,000	\$ 8,140,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	42,979	LF	\$ 30	\$ 18	\$ 12	\$ 1,289,376	\$ 773,626	\$ 515,750	\$ 2,578,752
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ 2,016,000	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	8.14	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 325,600	\$ 976,800	\$ 325,600	\$ 1,628,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,286,976	\$ 11,600,426	\$ 4,444,950	\$ 18,332,352
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.14	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,137,972	\$ 758,648	\$ 1,896,620
2.2	Formwork in Trench	329,402	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 658,803	\$ 494,102	\$ 164,701	\$ 1,317,606
2.3	Trench Excavation	24,376	CY		\$ 17.5	\$ 7.5	\$ -	\$ 426,575	\$ 182,818	\$ 609,393
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,539	CY	\$ 50	\$ 25	\$ 14	\$ 126,957	\$ 62,209	\$ 35,548	\$ 224,714
2.5	Supply & Install Thermal Backfill -conduit level	22,402	CY	\$ 350	\$ 245	\$ 105	\$ 7,840,559	\$ 5,488,391	\$ 2,352,168	\$ 15,681,117
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,830	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,566,030	\$ 978,769	\$ 391,508	\$ 2,936,306
2.8	Conduit 8" HDPE	257,875	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,296,757	\$ 1,462,152	\$ 626,637	\$ 7,385,546
2.9	Conduit 4" HDPE	85,958	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 461,597	\$ 361,025	\$ 154,725	\$ 977,347
2.10	Conduit 2" HDPE	85,958	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 164,181	\$ 270,769	\$ 116,044	\$ 550,993
2.11	Warning Tape	42,979	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,447	\$ 10,745	\$ 4,298	\$ 21,490
2.12	Trench Box Shoring (Vault)	80	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,446,328	\$ 2,169,492	\$ 3,615,819
2.13	Splice Vault Excavation	15,600	CY		\$ 17.5	\$ 7.5	\$ -	\$ 273,000	\$ 117,000	\$ 390,000
2.14	Splice Vault Supply & Installation	80	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,800,000	\$ 1,320,000	\$ 3,080,000	\$ 7,200,000
2.15	Splice Vault Backfill	4,680	CY		\$ 14.0	\$ 6.0	\$ -	\$ 65,520	\$ 28,080	\$ 93,600
2.16	Jack and Bore along Route	310	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 496,000	\$ 992,000	\$ 992,000	\$ 2,480,000
2.17	HDD along Route	1,494	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 2,390,400	\$ 4,780,800	\$ 4,780,800	\$ 11,952,000
2.18	Air Test Ducts	429,792	LF			\$ 0.25	\$ -	\$ -	\$ 107,448	\$ 107,448
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	25,010	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 350,138	\$ 350,138	\$ 175,069	\$ 875,345
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,947	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 155,478	\$ 163,252	\$ 69,965	\$ 388,695
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	78	EA		\$ 400	\$ 1,200	\$ -	\$ 31,321	\$ 93,962	\$ 125,282
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	78	EA		\$ 10	\$ 15	\$ -	\$ 783	\$ 1,175	\$ 1,958
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	224	EA		\$ 400	\$ 1,200	\$ -	\$ 89,606	\$ 268,819	\$ 358,426
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 444,444	\$ 296,296	\$ -	\$ 444,444	\$ 296,296	\$ 740,740
2.24	Excess Materials Disposal to Certified Backfill	45,884	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,124,169	\$ 481,787	\$ 1,605,955

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.25	Rock Excavation and Removal	26,650	CY		\$ 243	\$ 162	\$ -	\$ 6,476,066	\$ 4,317,378	\$ 10,793,444
2.26	Dewatering	80	EA			\$ 4,000	\$ -	\$ -	\$ 320,000	\$ 320,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,976	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,976	\$ 19,988	\$ 59,964
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 22,313,345	\$ 28,290,112	\$ 22,106,350	\$ 72,709,807
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.13	Link Box & MH racking	80	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,120,036	\$ 1,484,025	\$ 636,011	\$ 4,240,072
3.14	Fiber Optic Cable	90,256	FT	\$ 7	\$ 3	\$ 2	\$ 667,626	\$ 300,608	\$ 200,405	\$ 1,168,639
3.15	Ground Continuity Conductor	90,256	FT	\$ 13	\$ 8	\$ 5	\$ 1,176,852	\$ 679,359	\$ 452,906	\$ 2,309,118
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 48,809,874	\$ 29,550,805	\$ 18,559,479	\$ 96,920,158
AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit							\$ 73,410,195	\$ 69,441,342	\$ 45,110,780	\$ 187,962,317
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,436,564	\$ 2,291,042	\$ -	\$ 3,436,564	\$ 2,291,042	\$ 5,727,606
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,879,623.17		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		7,518,492.68		\$ -	\$ 7,518,493	\$ -	\$ 7,518,493
4.4	Utility PM and Project Oversight	1.0	LS		1,879,623.17		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,879,623.17			\$ 1,879,623	\$ -	\$ -	\$ 1,879,623
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,398,116	\$ -	\$ -	\$ 9,398,116	\$ -	\$ 9,398,116
4.7	LiDAR /GPR	1.0	LS		\$ 338,332	\$ 225,555	\$ -	\$ 338,332	\$ 225,555	\$ 563,887
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 1,315,736		\$ -	\$ 1,315,736	\$ -	\$ 1,315,736
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,879,623		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 563,887		\$ -	\$ 563,887	\$ -	\$ 563,887
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 219,811	\$ -	\$ -	\$ 219,811	\$ 219,811
4.16	Legal Fees (Real estate)	1.00	LS		-	6,594.33	\$ -	\$ -	\$ 6,594	\$ 6,594
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,660,000	\$ -	\$ -	\$ 6,660,000	\$ 6,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 73,410,195.24			\$ 6,518,825	\$ -	\$ -	\$ 6,518,825
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 187,962	\$ -	\$ -	\$ 187,962	\$ 187,962
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 8,398,449	\$ 29,274,567	\$ 9,607,345	\$ 47,280,360

Propel NY - TO51 AS5

AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit

Total: \$ 202,306,242

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579
SUBTOTAL (Costs):	\$ 48,389,256	\$ 63,543,409	\$ 30,938,976	\$ 142,871,640
CONTRACTOR MARK-UP (OH&P)	\$ 8,710,066	\$ 11,437,814	\$ 5,569,016	\$ 25,716,895
SUBTOTAL:	\$ 57,099,322	\$ 74,981,222	\$ 36,507,991	\$ 168,588,535
CONTINGENCY ON ENTIRE PROJECT	\$ 11,419,864	\$ 14,996,244	\$ 7,301,598	\$ 33,717,707
TOTAL:	\$ 68,519,186	\$ 89,977,467	\$ 43,809,589	\$ 202,306,242

Description of Work: The proposed 138 kV electric underground transmission line begins at the Syosset Substation in the Hamlet of Woodbury in the Town of Oyster Bay in Nassau County leading to the Shore Road Substation in the Hamlet of Glenwood Landing in the Town of Oyster Bay in Nassau County. The proposed route will be approximately 11.3 miles, utilizing 4000 kcmil XLPE cable

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,875,000	\$ 3,375,000	\$ 11,250,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	59,400	LF	\$ 30	\$ 18	\$ 12	\$ 1,782,000	\$ 1,069,200	\$ 712,800	\$ 3,564,000
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 450,000	\$ 1,350,000	\$ 450,000	\$ 2,250,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,572,750	\$ 1,048,500	\$ 2,621,250
2.2	Formwork in Trench	467,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 934,512	\$ 700,884	\$ 233,628	\$ 1,869,024
2.3	Trench Excavation	35,996	CY		\$ 17.5	\$ 7.5	\$ -	\$ 629,930	\$ 269,970	\$ 899,900
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,250	SF	\$ 50	\$ 25	\$ 14	\$ 112,488	\$ 55,119	\$ 31,497	\$ 199,103
2.5	Supply & Install Thermal Backfill	20,897	CY	\$ 350	\$ 245	\$ 105	\$ 7,313,854	\$ 5,119,698	\$ 2,194,156	\$ 14,627,709
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,222	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,644,482	\$ 1,027,801	\$ 411,120	\$ 3,083,403
2.9	Conduit 6" HDPE	178,200	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,888,920	\$ 1,010,394	\$ 433,026	\$ 3,332,340
2.10	Conduit 4" HDPE	59,400	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 318,978	\$ 249,480	\$ 106,920	\$ 675,378
2.11	Conduit 2" HDPE	59,400	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 113,454	\$ 187,110	\$ 80,190	\$ 380,754
2.12	Warning Tape	59,400	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,910	\$ 14,850	\$ 5,940	\$ 29,700
2.13	Trench Box Shoring (Vault)	33	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 596,610	\$ 894,915	\$ 1,491,525
2.14	Splice Vault Excavation	5,990	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,827	\$ 44,926	\$ 149,753
2.15	Splice Vault Supply & Installation	33	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,155,000	\$ 544,500	\$ 1,270,500	\$ 2,970,000
2.16	Splice Vault Backfill	1,797	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,158	\$ 10,782	\$ 35,941
2.17	Jack and Bore along Route	168	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 134,400	\$ 268,800	\$ 268,800	\$ 672,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	297,000	LF			\$ 0.25	\$ -	\$ -	\$ 74,250	\$ 74,250
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 299,187	\$ 299,187	\$ 149,594	\$ 747,968
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,936	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 132,853	\$ 139,496	\$ 59,784	\$ 332,133
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	82	EA		\$ 400	\$ 1,200	\$ -	\$ 32,890	\$ 98,669	\$ 131,559

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	82	EA		\$ 10	\$ 15	\$ -	\$ 822	\$ 1,233	\$ 2,056
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	209	EA		\$ 400	\$ 1,200	\$ -	\$ 83,587	\$ 250,761	\$ 334,348
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 614,250	\$ 409,500	\$ -	\$ 614,250	\$ 409,500	\$ 1,023,750
2.26	Excess Materials Disposal to Certified Backfill	52,246	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,280,023	\$ 548,581	\$ 1,828,604
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	33	EA			\$ 4,000	\$ -	\$ -	\$ 132,000	\$ 132,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,986	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,986	\$ 20,993	\$ 62,979
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	187,110	FT	\$ 127	\$ 76	\$ 51	\$ 23,762,970	\$ 14,257,782	\$ 9,505,188	\$ 47,525,940
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	99	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 583,902	\$ 974,802	\$ 278,515	\$ 1,837,218
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	33	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 879,747	\$ 527,848	\$ 351,899	\$ 1,759,494
3.11	Fiber Optic Cable	62,370	FT	\$ 7	\$ 3	\$ 2	\$ 461,351	\$ 207,730	\$ 138,486	\$ 807,567
3.12	Ground Continuity Conductor	62,370	FT	\$ 13	\$ 8	\$ 5	\$ 813,242	\$ 469,459	\$ 312,973	\$ 1,595,674
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit							\$ 43,400,234	\$ 44,927,052	\$ 25,180,776	\$ 113,508,061
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,103,235	\$ 1,402,157	\$ -	\$ 2,103,235	\$ 1,402,157	\$ 3,505,391
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,540,322.45		\$ -	\$ 4,540,322	\$ -	\$ 4,540,322
4.4	Utility PM and Project Oversight	1.0	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,135,080.61			\$ 1,135,081	\$ -	\$ -	\$ 1,135,081
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,675,403	\$ -	\$ -	\$ 5,675,403	\$ -	\$ 5,675,403
4.7	LiDAR /GPR	1.0	LS		\$ 204,315	\$ 136,210	\$ -	\$ 204,315	\$ 136,210	\$ 340,524
4.8	Geotech	12.0	Location		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 794,556		\$ -	\$ 794,556	\$ -	\$ 794,556
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,135,081		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 340,524		\$ -	\$ 340,524	\$ -	\$ 340,524
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 43,190	\$ -	\$ -	\$ 43,190	\$ 43,190
4.16	Legal Fees (Real estate)	1.00	LS		-	1,295.70	\$ -	\$ -	\$ 1,296	\$ 1,296
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,040,000	\$ -	\$ -	\$ 4,040,000	\$ 4,040,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 43,400,234.15			\$ 3,853,941	\$ -	\$ -	\$ 3,853,941
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 113,508	\$ -	\$ -	\$ 113,508	\$ 113,508
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579

Propel NY - TO51 AS5

AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit

Total: \$ 51,165,266

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 749,760	\$ 3,808,856	\$ 1,456,104	\$ 6,014,720
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,480,256	\$ 3,823,602	\$ 2,546,068	\$ 9,849,926
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,286,545	\$ 3,941,373	\$ 2,515,051	\$ 12,742,969
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,219,947	\$ 4,841,405	\$ 1,464,696	\$ 7,526,048
SUBTOTAL (Costs):	\$ 11,736,508	\$ 16,415,236	\$ 7,981,918	\$ 36,133,662
CONTRACTOR MARK-UP (OH&P)	\$ 2,112,571	\$ 2,954,742	\$ 1,436,745	\$ 6,504,059
SUBTOTAL:	\$ 13,849,080	\$ 19,369,978	\$ 9,418,664	\$ 42,637,722
CONTINGENCY ON ENTIRE PROJECT	\$ 2,769,816	\$ 3,873,996	\$ 1,883,733	\$ 8,527,544
TOTAL:	\$ 16,618,896	\$ 23,243,974	\$ 11,302,396	\$ 51,165,266

Description of Work: Replace the existing circuit utilized as part of the 2-cable circuit with an additional 2.6-mile underground 138 KV transmission circuit to match the ratings of the existing aerial portions of the transmission circuit. (Upgraded circuit from Greenlawn to Syosset Transition).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.65	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,855,000	\$ 795,000	\$ 2,650,000
1.3	Flaggers	140	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 224,000	\$ 672,000	\$ 224,000	\$ 1,120,000
1.4	K Rail / Lane Control / Metal Plates	13,992	LF	\$ 30	\$ 18	\$ 12	\$ 419,760	\$ 251,856	\$ 167,904	\$ 839,520
1.5	Police Support	5,600.0	HR		\$ 120	\$ 27	\$ -	\$ 672,000	\$ 151,200	\$ 823,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	2.65	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 106,000	\$ 318,000	\$ 106,000	\$ 530,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 749,760	\$ 3,808,856	\$ 1,456,104	\$ 6,014,720
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	2.65	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 370,470	\$ 246,980	\$ 617,450
2.2	Formwork in Trench	107,936	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 215,872	\$ 161,904	\$ 53,968	\$ 431,744
2.3	Trench Excavation	8,315	CY		\$ 17.5	\$ 7.5	\$ -	\$ 145,514	\$ 62,363	\$ 207,877
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	520	SF	\$ 50	\$ 25	\$ 14	\$ 25,985	\$ 12,732	\$ 7,276	\$ 45,993
2.5	Supply & Install Thermal Backfill	4,827	CY	\$ 350	\$ 245	\$ 105	\$ 1,689,498	\$ 1,182,649	\$ 506,849	\$ 3,378,996
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,899	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 379,875	\$ 237,422	\$ 94,969	\$ 712,265
2.9	Conduit 6" HDPE	41,976	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 444,946	\$ 238,004	\$ 102,002	\$ 784,951
2.10	Conduit 4" HDPE	13,992	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 75,137	\$ 58,766	\$ 25,186	\$ 159,089
2.11	Conduit 2" HDPE	13,992	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 26,725	\$ 44,075	\$ 18,889	\$ 89,689
2.12	Warning Tape	13,992	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 2,099	\$ 3,498	\$ 1,399	\$ 6,996
2.13	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.14	Splice Vault Excavation	1,452	CY		\$ 17.5	\$ 7.5	\$ -	\$ 25,413	\$ 10,891	\$ 36,304
2.15	Splice Vault Supply & Installation	8	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 280,000	\$ 132,000	\$ 308,000	\$ 720,000
2.16	Splice Vault Backfill	436	CY		\$ 14.0	\$ 6.0	\$ -	\$ 6,099	\$ 2,614	\$ 8,713
2.17	Jack and Bore along Route	300	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 240,000	\$ 480,000	\$ 480,000	\$ 1,200,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	69,960	LF			\$ 0.25	\$ -	\$ -	\$ 17,490	\$ 17,490
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,952	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 69,333	\$ 69,333	\$ 34,667	\$ 173,333

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,376	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 30,787	\$ 32,327	\$ 13,854	\$ 76,968
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	19	EA		\$ 400	\$ 1,200	\$ -	\$ 7,597	\$ 22,792	\$ 30,390
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	19	EA		\$ 10	\$ 15	\$ -	\$ 190	\$ 285	\$ 475
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	48	EA		\$ 400	\$ 1,200	\$ -	\$ 19,309	\$ 57,926	\$ 77,234
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 144,690	\$ 96,460	\$ -	\$ 144,690	\$ 96,460	\$ 241,150
2.26	Excess Materials Disposal to Certified Backfill	12,131	CY		\$ 24.5	\$ 10.5	\$ -	\$ 297,211	\$ 127,376	\$ 424,587
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	9,767	CF		\$ 1.0	\$ 0.5	\$ -	\$ 9,767	\$ 4,884	\$ 14,651
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,480,256	\$ 3,823,602	\$ 2,546,068	\$ 9,849,926
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	44,075	FT	\$ 127	\$ 76	\$ 51	\$ 5,597,500	\$ 3,358,500	\$ 2,239,000	\$ 11,194,999
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT		\$ 94	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT		\$ 94	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	14,692	FT	\$ 7	\$ 3	\$ 2	\$ 108,674	\$ 48,932	\$ 32,621	\$ 190,227
3.12	Ground Continuity Conductor	14,692	FT	\$ 13	\$ 8	\$ 5	\$ 191,564	\$ 110,584	\$ 73,722	\$ 375,870
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,286,545	\$ 3,941,373	\$ 2,515,051	\$ 12,742,969
AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit							\$ 10,516,561	\$ 11,573,831	\$ 6,517,223	\$ 28,607,615
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 542,732	\$ 361,821	\$ -	\$ 542,732	\$ 361,821	\$ 904,553
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		286,076.15		\$ -	\$ 286,076	\$ -	\$ 286,076
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		1,144,304.60		\$ -	\$ 1,144,305	\$ -	\$ 1,144,305
4.4	Utility PM and Project Oversight	1.0	LS		286,076.15		\$ -	\$ 286,076	\$ -	\$ 286,076
4.5	Site Accommodation, Facilities, Storage	1.0	LS	286,076.15			\$ 286,076	\$ -	\$ -	\$ 286,076
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,430,381	\$ -	\$ -	\$ 1,430,381	\$ -	\$ 1,430,381
4.7	LiDAR /GPR	1.0	LS		\$ 51,494	\$ 34,329	\$ -	\$ 51,494	\$ 34,329	\$ 85,823
4.8	Geotech	3.0	Location		2,730.00	1,820.00	\$ -	\$ 8,190	\$ 5,460	\$ 13,650
4.9	Surveying/Staking	1	LS		\$ 200,253		\$ -	\$ 200,253	\$ -	\$ 200,253
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 286,076		\$ -	\$ 286,076	\$ -	\$ 286,076
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 85,823		\$ -	\$ 85,823	\$ -	\$ 85,823
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 14,056	\$ -	\$ -	\$ 14,056	\$ 14,056
4.16	Legal Fees (Real estate)	1.00	LS		-	421.68	\$ -	\$ -	\$ 422	\$ 422
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,020,000	\$ -	\$ -	\$ 1,020,000	\$ 1,020,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 10,516,561.35			\$ 933,871	\$ -	\$ -	\$ 933,871
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 28,608	\$ -	\$ -	\$ 28,608	\$ 28,608
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,219,947	\$ 4,841,405	\$ 1,464,696	\$ 7,526,048

Propel NY - TO51 AS5	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO51 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project (expect East Garden City station) only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
21	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
22	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
23	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
24	The trench excavation width and depth assumed details are shown in each tab.
25	The MH counts are based on our field and desktop review
26	Assumes that 30% of native spoils from vault excavation will be used as backfill.
27	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
28	Assumed asphalt paving repair includes a 2" surfacing course pavement
29	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
30	All Tline segments construction period is based on the provided milestone schedule.
31	Shore Road to Sprainbrook 345kv UG line, assume Shore Road to New Rochelle is 4-circuit, New Rochelle to Sprainbrook is 2 -circuit.
32	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 1 circuits, 2 cable per circuit, so there are 2 passes.
33	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
33	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
34	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
35	Substation pad is based on 8" base and 6" surfacing rock.
36	The firewalls for transformers/PAR/Reactors are assumed 30' tall, if required
37	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
38	Costs for precast concrete piles (12"x80') were included in several substations by developer, there are no drawings nor geo technical report to verify if it is required and the quantities. We assumed it is required and included the costs based on developer's quantities.
39	The control panels quantities and values are provided by Sub Station Engineers.

Propel NY - TO52 AS6		
REVISION: 1		
Propel NY - TO52 AS6 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1 - New Rochelle 345kV Substation	\$ 6,440,082
Direct Labor, Material & Equipment Costs	2- New 345/138 kV Eastern Queens Substation	\$ 140,332,102
Direct Labor, Material & Equipment Costs	3 - Shore Road 345 kV GIS Substation	\$ 116,787,770
Direct Labor, Material & Equipment Costs	4 - Ruland Road 345/138 kV Substation	\$ 85,451,972
Direct Labor, Material & Equipment Costs	5 - Barrett 345 kV Substation	\$ 56,131,681
Direct Labor, Material & Equipment Costs	6 - Existing 345 kV Tremont Substation_GIS_ Interconnection	\$ 21,413,864
Direct Labor, Material & Equipment Costs	7 - Existing Sprain Brook 345 kV_ Interconnection	\$ 24,240,513
Direct Labor, Material & Equipment Costs	8 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 4,984,863
Direct Labor, Material & Equipment Costs	9 -Existing Shore Road 138 kV_ Interconnection	\$ 6,394,174
Direct Labor, Material & Equipment Costs	10 - Existing Dunwoodie 345 kV_ Interconnection	\$ 4,249,613
Direct Labor, Material & Equipment Costs	11 -Existing Holbrook 138 Kv_ Upgrade	\$ 1,013,645
Direct Labor, Material & Equipment Costs	12 -Existing Newbridge 138 Kv_ Upgrade	\$ 2,462,790
Direct Labor, Material & Equipment Costs	13 - Existing EGC 138 kV_ Upgrade	\$ 8,195,943
Direct Labor, Material & Equipment Costs	14 - Existing Rainey 345 kV_ Upgrade	\$ 5,218,315
Direct Labor, Material & Equipment Costs	15 - Existing EGC 345 kV_ Upgrade	\$ 86,988,971
Direct Labor, Material & Equipment Costs	16 -Existing Syosset 138 kV_ Interconnection	\$ 12,405,013
Direct Labor, Material & Equipment Costs	17 -Other Substation Upgrades	\$ 341,250
SUBTOTAL (Costs):		\$ 583,052,561
CONTRACTOR MARK-UP (OH&P)		\$ 92,902,791
SUBTOTAL (AFTER MU):		\$ 675,955,352
CONTINGENCY ON ENTIRE PROJECT		\$ 135,191,070
Substation TOTAL:		\$ 811,146,422
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	AS 6.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$ 100,737,410
Direct Labor, Material & Equipment Costs	AS6.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 307,723,518
Direct Labor, Material & Equipment Costs	AS6.3 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 118,629,508
Direct Labor, Material & Equipment Costs	AS6.4 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 202,597,296
Direct Labor, Material & Equipment Costs	AS6.5a Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)	\$ 263,975,655
Direct Labor, Material & Equipment Costs	AS6.5a Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)	\$ 62,112,869
Direct Labor, Material & Equipment Costs	AS6.5b- New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit	\$ 187,962,317
Direct Labor, Material & Equipment Costs	AS6.6 Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 113,508,061
Direct Labor, Material & Equipment Costs	AS6.7 Syosset to Oakwood 138kV Onshore UG Cables -single circuit	\$ 28,607,615
Direct Labor, Material & Equipment Costs	AS6.8 East Garden City to Eastern Queens Onshore UG Cables -Double circuit	\$ 240,297,521
Direct Labor, Material & Equipment Costs	AS6.9 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit	\$ 272,316,291
Direct Labor, Material & Equipment Costs	AS6.10a- 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 11,079,982
Direct Labor, Material & Equipment Costs	AS6.10b- 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 40,430,416
Direct Labor, Material & Equipment Costs	AS6.11 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit	\$ 63,689,609
Direct Labor, Material & Equipment Costs	AS6.13 East Garden City to Ruland 345kV Onshore UG Cables -single circuit	\$ 7,664,587
Direct Labor, Material & Equipment Costs	Other Misc. Upgrades	\$ 8,200,000
SUBTOTAL (Costs):		\$ 2,029,532,655
CONTRACTOR MARK-UP (OH&P)		\$ 365,315,878
SUBTOTAL (AFTER MU):		\$ 2,394,848,533
CONTINGENCY ON ENTIRE PROJECT		\$ 478,969,707
Transmission TOTAL:		\$ 2,873,818,240
Propel NY - TO52 AS6Total Direct Cost		\$ 3,684,964,662

Propel NY - TO52 AS6 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1 - New Rochelle 345kV Substation	\$ 4,581,066
Indirect Costs	2- New 345/138 kV Eastern Queens Substation	\$ 55,073,559
Indirect Costs	3 - Shore Road 345 kV GIS Substation	\$ 33,730,718
Indirect Costs	4 - Ruland Road 345/138 kV Substation	\$ 28,895,079
Indirect Costs	5 - Barrett 345 kV Substation	\$ 26,528,456
Indirect Costs	6 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 3,217,283
Indirect Costs	7 - Existing Sprain Brook 345 kV_ Interconnection	\$ 5,385,785
Indirect Costs	8 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 1,610,496
Indirect Costs	9 -Existing Shore Road 138 kV_ Interconnection	\$ 2,026,220
Indirect Costs	10 - Existing Dunwoodie 345 kV_ Interconnection	\$ 685,728
Indirect Costs	11 -Existing Holbrook 138 Kv_ Upgrade	\$ 333,220
Indirect Costs	12 -Existing Newbridge 138 Kv_ Upgrade	\$ 816,867
Indirect Costs	13 - Existing EGC 138 kV_ Upgrade	\$ 2,572,822
Indirect Costs	14 - Existing Rainey 345 kV_ Upgrade	\$ 1,719,879
Indirect Costs	15 - Existing EGC 345 kV_ Upgrade	\$ 48,784,758
Indirect Costs	16 -Existing Syosset 138 kV_ Interconnection	\$ 4,132,015
Indirect Costs	17 -Other Substation Upgrades	\$ 116,339
SUBTOTAL (Costs):		\$ 220,210,290
CONTRACTOR MARK-UP (OH&P)		\$ 39,637,852
SUBTOTAL (AFTER MU):		\$ 259,848,142
CONTINGENCY ON ENTIRE PROJECT		\$ 51,969,628
Substation TOTAL:		\$ 311,817,771
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	AS 6.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$ 25,517,620
Indirect Costs	AS6.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 78,106,163
Indirect Costs	AS6.3 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 30,726,945
Indirect Costs	AS6.4 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 51,255,552
Indirect Costs	AS6.5a Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)	\$ 65,279,093
Indirect Costs	AS6.5a Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)	\$ 15,893,013
Indirect Costs	AS6.5b- New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit	\$ 47,280,360
Indirect Costs	AS6.6 Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 29,363,579
Indirect Costs	AS6.7 Syosset to Oakwood 138kV Onshore UG Cables -single circuit	\$ 7,526,048
Indirect Costs	AS6.8 East Garden City to Eastern Queens Onshore UG Cables -Double circuit	\$ 60,714,110
Indirect Costs	AS6.9 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit	\$ 69,675,926
Indirect Costs	AS6.10a- 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 3,274,585
Indirect Costs	AS6.10b- 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 10,503,551
Indirect Costs	AS6.11 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit	\$ 16,606,670
Indirect Costs	AS6.13 East Garden City to Ruland 345kV Onshore UG Cables -single circuit	\$ 2,413,466
Indirect Costs	Other Misc. Upgrades	\$ 2,606,000
SUBTOTAL (Costs):		\$ 516,742,680
CONTRACTOR MARK-UP (OH&P)		\$ 93,013,682
SUBTOTAL (AFTER MU):		\$ 609,756,362
CONTINGENCY ON ENTIRE PROJECT		\$ 121,951,272
Transmission Line TOTAL:		\$ 731,707,634
Propel NY - TO52 AS6 Total Indirect Cost		\$ 1,043,525,405
Propel NY - TO52 AS6 Total		\$ 4,728,490,067

Propel NY - TO52 AS6
1 - New Rochelle 345kV Substation

Total: \$ 15,605,944

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
1 - New Rochelle 345kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS	\$ 303,945	\$ 347,365	\$ 217,103	\$ 868,413
3. SUBSTATION STRUCTURES	\$ 387,784	\$ 370,543	\$ 243,529	\$ 1,001,856
4. MAJOR EQUIPMENT	\$ 1,054,092	\$ 326,781	\$ 140,049	\$ 1,520,922
5. LOW VOLTAGE & CONTROL CABLE	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH	\$ 198,584	\$ 47,246	\$ 14,241	\$ 260,071
7. GROUND GRID	\$ 62,150	\$ 44,329	\$ 10,127	\$ 116,606
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 347,044	\$ 1,411,541	\$ 2,822,480	\$ 4,581,066
SUBTOTAL (Costs):	\$ 3,558,903	\$ 3,404,512	\$ 4,057,732	\$ 11,021,147
CONTRACTOR MARK-UP (OH&P)	\$ 640,603	\$ 612,812	\$ 730,392	\$ 1,983,806
SUBTOTAL:	\$ 4,199,506	\$ 4,017,324	\$ 4,788,124	\$ 13,004,954
CONTINGENCY ON ENTIRE PROJECT	\$ 839,901	\$ 803,465	\$ 957,625	\$ 2,600,991
TOTAL:	\$ 5,039,407	\$ 4,820,789	\$ 5,745,748	\$ 15,605,944

Description of Work: New, greenfield substation to be called “New Rochelle Substation,” which would be 345 kV and located near 60 Echo Avenue in the City of New Rochelle, Westchester County. The substation would allow for the transition of electric submarine transmission cables to electric underground transmission cables at a location outside of the shoreline of Long Island Sound.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1 - New Rochelle 345kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 19,980	\$ 13,320	\$ 33,300
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,698	SY	4.85	7.20	4.80	\$ 17,933	\$ 26,622	\$ 17,748	\$ 62,304
1.4	Strip and Dispose Top Soil	2,985	CY		24.50	10.50	\$ -	\$ 73,124	\$ 31,339	\$ 104,463
1.5	Site Grading- Excavation for Substation Pad	8,954	CY		9.00	6.00	\$ -	\$ 80,586	\$ 53,724	\$ 134,310
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	4,835	CY		21.00	9.00	\$ -	\$ 101,538.36	\$ 43,516.44	\$ 145,054.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,253	CY		2.40	1.60	\$ -	\$ 17,407	\$ 11,604	\$ 29,011
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,835	CY	25.00	2.40	1.60	\$ 120,879	\$ 11,604	\$ 7,736	\$ 140,220
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,954	SY	11.00	6.00	4.00	\$ 98,494	\$ 53,724	\$ 35,816	\$ 188,034
1.11	Site Surfacing - Aggregate 6" Thick	8,954	SY	16.50	4.50	3.00	\$ 147,741	\$ 40,293	\$ 26,862	\$ 214,896
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,285	LF	13.85	13.85	6.92	\$ 17,795	\$ 17,795	\$ 8,897	\$ 44,487
1.13	24' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	328,812.00	38,400.00	25,368.00	\$ 328,812	\$ 38,400	\$ 25,368	\$ 392,580
1.16	Seeding	25,302	SF	1.50	1.50	1.00	\$ 37,953	\$ 37,953	\$ 25,302	\$ 101,208
1.17	Erosion Control-Silt fence install & remove	2,307	LF	2.41	3.16	0.72	\$ 5,560	\$ 7,290	\$ 1,661	\$ 14,511
1.18	Temporary fencing	1,538	LF	7.50	5.25	2.25	\$ 11,535	\$ 8,075	\$ 3,461	\$ 23,070
1.19	Substation entrance with asphalt	1,085	SY	19.50	26.00	19.50	\$ 21,164	\$ 28,219	\$ 21,164	\$ 70,547
1.20	Guardrail	532	LF	24.00	32.00	24.00	\$ 12,768	\$ 17,024	\$ 12,768	\$ 42,560
1.21	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.22	Retaining Wall	1,140	LF	312.00	234.00	234.00	\$ 355,680	\$ 266,760	\$ 266,760	\$ 889,200
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	88	CY	703.89	804.44	502.78	\$ 62,280	\$ 71,177	\$ 44,486	\$ 177,942
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch (Double Break)	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.30	Precast Concrete Piles-12"X80'	-	EA							
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 303,945	\$ 347,365	\$ 217,103	\$ 868,413
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch (Double Break)	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	700	LF	25.00	184.94	123.29	\$ 17,500	\$ 129,457	\$ 86,304	\$ 233,261
3.22	AL. Bus fittings	1	LS	21,000.00	21,000.00	10,500.00	\$ 21,000	\$ 21,000	\$ 10,500	\$ 52,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 387,784	\$ 370,543	\$ 243,529	\$ 1,001,856
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	18	EA	27,144.00	5,460.00	2,340.00	\$ 488,592	\$ 98,280	\$ 42,120	\$ 628,992
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch (Double Break)	6	EA	68,900.00	21,703.50	9,301.50	\$ 413,400	\$ 130,221	\$ 55,809	\$ 599,430
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	18	EA	8,450.00	5,460.00	2,340.00	\$ 152,100	\$ 98,280	\$ 42,120	\$ 292,500
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA		11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		3,150.00	1,350.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.23	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,054,092	\$ 326,781	\$ 140,049	\$ 1,520,922
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,600	LF	5.30	1.43	0.29	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	900	LF	11.15	10.80	5.40	\$ 10,035	\$ 9,720	\$ 4,860	\$ 24,615
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	708	LF	266.50	53.04	13.26	\$ 188,549	\$ 37,526	\$ 9,381	\$ 235,456
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 198,584	\$ 47,246	\$ 14,241	\$ 260,071
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,150	LF	2.09	3.42	1.46	\$ 12,860	\$ 21,004	\$ 9,002	\$ 42,866
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		\$ 29,040	\$ 13,200	\$ -	\$ 42,240
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	\$ 20,250	\$ 10,125	\$ 1,125	\$ 31,500
TOTAL - GROUND GRID							\$ 62,150	\$ 44,329	\$ 10,127	\$ 116,606
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L		EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (Pilot): GE L90		EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.7	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
1 - New Rochelle 345kV Substation							\$ 3,211,859	\$ 1,992,971	\$ 1,235,252	\$ 6,440,082
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		112,987.80	48,423.34	\$ -	\$ 112,988	\$ 48,423	\$ 161,411
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		257,603.26		\$ -	\$ 257,603	\$ -	\$ 257,603
9.4	Utility PM and Project Oversight	1.0	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.5	Site Accommodation, Facilities, Storage	1.0	LS	64,400.82			\$ 64,401	\$ -	\$ -	\$ 64,401
	Engineering									
9.6	Design Engineering	1.00	LS		515,206.52		\$ -	\$ 515,207	\$ -	\$ 515,207
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		45,080.57		\$ -	\$ 45,081	\$ -	\$ 45,081
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		241,503.06		\$ -	\$ 241,503	\$ -	\$ 241,503
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		19,320.24		\$ -	\$ 19,320	\$ -	\$ 19,320
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,393,162.00	\$ -	\$ -	\$ 2,393,162	\$ 2,393,162
9.17	Legal Fees (Real estate)	1.00	LS		-	71,794.86	\$ -	\$ -	\$ 71,795	\$ 71,795
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
9.20	Sales Tax on Materials	8.80%	LS	3,211,858.68			\$ 282,644	\$ -	\$ -	\$ 282,644
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,440.08		\$ -	\$ 6,440	\$ -	\$ 6,440
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 347,044	\$ 1,411,541	\$ 2,822,480	\$ 4,581,066

Propel NY - TO52 AS6

2- New 345/138 kV Eastern Queens Substation

Total: \$ 273,921,155

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
2- New 345/138 kV Eastern Queens Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 972,253	\$ 1,074,839	\$ 696,956	\$ 2,744,047.49
2. SUBSTATION FOUNDATIONS	\$ 19,645,827	\$ 9,906,067	\$ 6,898,398	\$ 36,450,292.13
3. SUBSTATION STRUCTURES	\$ 1,783,925	\$ 1,236,864	\$ 732,602	\$ 3,753,392.00
4. MAJOR EQUIPMENT	\$ 74,193,940	\$ 10,304,783	\$ 6,701,521	\$ 91,200,243.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 557,827	\$ 150,842	\$ 30,168	\$ 738,837.45
6. CONDUIT & CABLE TRENCH	\$ 527,273	\$ 279,990	\$ 125,078	\$ 932,340.00
7. GROUND GRID	\$ 185,094	\$ 133,911	\$ 31,333	\$ 350,338.50
8. CONTROL ENCLOSURE	\$ 2,021,806	\$ 1,617,486	\$ 523,320	\$ 4,162,611.31
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,193,460	\$ 26,306,557	\$ 18,573,542	\$ 55,073,559.12
Turnkey cost (HVDC, GIS)	\$ 9,629,379	\$ 5,777,627	\$ 3,851,751	\$ 19,258,757
Non-Turnkey cost	\$ 100,452,025	\$ 45,233,713	\$ 30,461,167	\$ 176,146,904
SUBTOTAL (Costs):	\$ 110,081,403	\$ 51,011,340	\$ 34,312,918	\$ 195,405,661
CONTRACTOR MARK-UP (OH&P):	\$ 18,659,127	\$ 8,488,726	\$ 5,714,115	\$ 32,861,968
SUBTOTAL:	\$ 128,740,530	\$ 59,500,066	\$ 40,027,033	\$ 228,267,629
CONTINGENCY ON ENTIRE PROJECT	\$ 25,748,106	\$ 11,900,013	\$ 8,005,407	\$ 45,653,526
TOTAL:	\$ 154,488,636	\$ 71,400,079	\$ 48,032,440	\$ 273,921,155

Description of Work: new 345/ 138 kV GIS substation in Eastern Queens at a vacant utility owned property in the area of 180th Street and Brinkerhoff Avenue. The configuration of the station would include an eight six position 345 kV GIS ring bus which will allow for interconnection of the 3 underground circuits from Barrett Substation and the two circuits that connect to Tremont and Dunwoodie Substations. In addition, there will be 3 – 345/138kV autotransformers that connect to the 345 kV bus. Two of the autotransformers will feed a new 138 kV four breaker ring bus that will interconnect to the 901 and 903 circuits that will connect to Jamaica Substation. Each of the feeders that interconnect to Jamaica will be PAR controlled. The third autotransformer, with 138 kV PAR will feed a sperate new 138 kV four breaker ring bus that will interconnect with the 901 and 903 circuits that will connect to Valley Stream and Lake Success Substations. The existing PARs at Lake Success and Valley Stream will be removed.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2- New 345/138 kV Eastern Queens Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'	2,958	SY	4.85	7.20	4.80	\$ 14,346	\$ 21,298	\$ 14,198	\$ 49,842
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	16,682	CY		9.00	6.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,252	CY		21.00	9.00	\$ -	\$ 47,293.68	\$ 20,268.72	\$ 67,562.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	20,269	CY		2.40	1.60	\$ -	\$ 48,645	\$ 32,430	\$ 81,075
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,252	CY	25.00	2.40	1.60	\$ 56,302	\$ 5,405	\$ 3,603	\$ 65,310
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	25,023	SY	-	6.00	4.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.11	Site Surfacing - Aggregate 6" Thick	25,023	SY	8.25	4.50	3.00	\$ 206,441	\$ 112,604	\$ 75,069	\$ 394,114
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,568	LF	13.85	13.85	6.92	\$ 21,714	\$ 21,714	\$ 10,857	\$ 54,284
1.13	30' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	519,366.15	96,000.00	45,300.00	\$ 519,366	\$ 96,000	\$ 45,300	\$ 660,666
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,185	LF	2.41	3.16	0.72	\$ 7,675	\$ 10,063	\$ 2,293	\$ 20,031
1.18	Temporary fencing	2,123	LF	7.50	5.25	2.25	\$ 15,923	\$ 11,146	\$ 4,777	\$ 31,845
1.19	Substation entrance with asphalt	778	SY	19.50	26.00	19.50	\$ 15,167	\$ 20,222	\$ 15,167	\$ 50,556

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	580	LF	156.00	117.00	117.00	\$ 90,480	\$ 67,860	\$ 67,860	\$ 226,200
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 972,253	\$ 1,074,839	\$ 696,956	\$ 2,744,047
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	142	CY	703.89	804.44	502.78	\$ 100,290	\$ 114,617	\$ 71,635	\$ 286,542
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,785	\$ 8,897	\$ 5,561	\$ 22,243
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.11	345kV, GIS support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	13	CY	703.89	804.44	502.78	\$ 9,291	\$ 10,619	\$ 6,637	\$ 26,547
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	32	CY	703.89	804.44	502.78	\$ 22,299	\$ 25,485	\$ 15,928	\$ 63,712
2.16	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.23	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.24	345/138 Kv, Control Enclosure-BLDG with generator pad	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.25	138kV, Phase Angle Regulator with oil containment	462	CY	703.89	804.44	502.78	\$ 325,195	\$ 371,651	\$ 232,282	\$ 929,128
2.26	138kV, Circuit Breaker (PASS)	31	CY	703.89	804.44	502.78	\$ 21,899	\$ 25,027	\$ 15,642	\$ 62,568
2.27	138kV, Bus support-3 Ph, low	171	CY	703.89	804.44	502.78	\$ 120,505	\$ 137,720	\$ 86,075	\$ 344,300
2.28	138kV, Bus support-1 Ph, low	154	CY	703.89	804.44	502.78	\$ 108,595	\$ 124,109	\$ 77,568	\$ 310,273
2.29	138kV, Disconnect Switch	170	CY	703.89	804.44	502.78	\$ 119,435	\$ 136,497	\$ 85,311	\$ 341,243
2.30	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.31	138kV, CCVT	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.32	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.34	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, H Frame -SHARED COLUMN (2 BAY)	176	CY	703.89	804.44	502.78	\$ 123,870	\$ 141,565	\$ 88,478	\$ 353,913
2.37	Firewall Foundation	990	CY	703.89	804.44	502.78	\$ 696,846	\$ 796,396	\$ 497,747	\$ 1,990,989
2.38	Precast Firewall for transformer, PARs, reactors	16,290	SF	25.00	15.00	10.00	\$ 407,250	\$ 244,350	\$ 162,900	\$ 814,500
2.39	Precast Concrete Piles-12"X80'	692	EA	18,000.00	3,200.00	2,800.00	\$ 12,456,000	\$ 2,214,400	\$ 1,937,600	\$ 16,608,000
2.40	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 2,607	\$ 2,979	\$ 1,862	\$ 7,449
2.41	Precast Arch. Wall foundation	3,564	CY	703.89	804.44	502.78	\$ 2,508,646	\$ 2,867,024	\$ 1,791,890	\$ 7,167,560
2.42	Precast Arch. Wall	1,800	LF	227.50	91.00	136.50	\$ 409,500.00	\$ 163,800.00	\$ 245,700.00	\$ 819,000.00
2.43	345KV GIS Sub Slab	741	CY	703.89	804.44	502.78	\$ 521,396.30	\$ 595,881.48	\$ 372,425.93	\$ 1,489,703.70
TOTAL - 345KV FOUNDATION							\$ 19,645,827	\$ 9,906,067	\$ 6,898,398	\$ 36,450,292
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	8	EA	23,400.00	14,040.00	9,360.00	\$ 187,200	\$ 112,320	\$ 74,880	\$ 374,400
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	15	EA	4,810.00	2,886.00	1,924.00	\$ 72,150	\$ 43,290	\$ 28,860	\$ 144,300
3.10	345kV, GIS support-3 Ph	12	EA	8,346.00	5,758.74	3,839.16	\$ 100,152	\$ 69,105	\$ 46,070	\$ 215,327
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	1	EA	19,240.00	11,544.00	7,696.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.15	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.16	138kV, Bus support-3 Ph, low	16	EA	4,173.00	2,879.76	1,919.84	\$ 66,768	\$ 46,076	\$ 30,717	\$ 143,562

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.17	138kV, Bus support-1 Ph, low	38	EA	2,782.00	1,919.84	1,279.89	\$ 105,716	\$ 72,954	\$ 48,636	\$ 227,306
3.18	138kV, Disconnect Switch	7	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, CCVT	24	EA	3,206.67	1,924.00	1,282.67	\$ 76,960	\$ 46,176	\$ 30,784	\$ 153,920
3.21	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame -SHARED COLUMN (2 BAY)	2	EA	42,900.00	25,740.00	17,160.00	\$ 85,800	\$ 51,480	\$ 34,320	\$ 171,600
3.24	AL. Bus Tubing, 5" SCH 80	1,530	LF	25.00	184.94	123.29	\$ 38,250	\$ 282,955	\$ 188,637	\$ 509,842
3.25	AL. Bus fittings	1	LS	45,900.00	45,900.00	22,950.00	\$ 45,900	\$ 45,900	\$ 22,950	\$ 114,750
3.26	Steel grating and support beams-transformer moat	302,960	LB	2.73	1.17	0.50	\$ 827,631	\$ 354,160	\$ 151,783	\$ 1,333,575
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,783,925	\$ 1,236,864	\$ 732,602	\$ 3,753,392
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	3	EA	17,400.00	5,460.00	2,340.00	\$ 52,200	\$ 16,380	\$ 7,020	\$ 75,600
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	1	EA	57,720.00	34,632.00	23,088.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
4.8	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.9	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.15	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,604,896.42	962,937.85	641,958.57	\$ 9,629,379	\$ 5,777,627	\$ 3,851,751	\$ 19,258,757
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	3	EA	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.20	138kV, Phase Angle Regulator with oil containment	3	EA	10,087,382.00	3,520.00	880.00	\$ 30,262,146	\$ 10,560	\$ 2,640	\$ 30,275,346
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	3	EA		381,400.00	250,600.00	\$ -	\$ 1,144,200	\$ 751,800	\$ 1,896,000
4.22	138kV, Circuit Breaker (PASS)	7	EA	510,000.00	13,559.00	5,811.00	\$ 3,570,000	\$ 94,913	\$ 40,677	\$ 3,705,590
4.23	138kV, Disconnect Switch	7	EA	37,700.00	11,875.50	5,089.50	\$ 263,900	\$ 83,129	\$ 35,627	\$ 382,655
4.24	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.25	138kV, CCVT	24	EA	10,000.00	7,970.08	3,415.75	\$ 240,000	\$ 191,282	\$ 81,978	\$ 513,260
4.26	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.27	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.28	345kV Gas-Insulated Bus Conductor	1,564	LF	550.00	275.00	82.50				\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow	36	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 74,193,940	\$ 10,304,783	\$ 6,701,521	\$ 91,200,243
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	105,300	LF	5.30	1.43	0.29	\$ 557,827	\$ 150,842	\$ 30,168	\$ 738,837
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 557,827	\$ 150,842	\$ 30,168	\$ 738,837
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	20,400	LF	11.15	10.80	5.40	\$ 227,460	\$ 220,320	\$ 110,160	\$ 557,940
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,125	LF	266.50	53.04	13.26	\$ 299,813	\$ 59,670	\$ 14,918	\$ 374,400
TOTAL - CONDUIT & CABLE TRENCH							\$ 527,273	\$ 279,990	\$ 125,078	\$ 932,340
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	19,050	LF	2.09	3.42	1.46	\$ 39,834	\$ 65,061	\$ 27,883	\$ 132,779
7.2	Caweld, DSA, 4/0 , T, CROSS	504	EA	165.00	75.00		\$ 83,160	\$ 37,800	\$ -	\$ 120,960
7.3	Ground Rod, 3/4" x 15'	460	EA	135.00	67.50	7.50	\$ 62,100	\$ 31,050	\$ 3,450	\$ 96,600
TOTAL - GROUND GRID							\$ 185,094	\$ 133,911	\$ 31,333	\$ 350,339
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	522,587.44	365,811.21	156,776.23	\$ 522,587	\$ 365,811	\$ 156,776	\$ 1,045,175
8.2	Primary Line Relays (Pilot): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.3	Backup Line Relays (Pilot): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Primary Bay Control: SEL-451	13	EA	21,328.12	17,062.49	4,265.62	\$ 277,265	\$ 221,812	\$ 55,453	\$ 554,531

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.5	Backup Bay Control: SEL-451	13	EA	21,328.12	17,062.49	4,265.62	\$ 277,265	\$ 221,812	\$ 55,453	\$ 554,531
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.8	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator,	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.9	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.12	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.13	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.14	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,021,806	\$ 1,617,486	\$ 523,320	\$ 4,162,611
2- New 345/138 kV Eastern Queens Substation							\$ 99,887,943	\$ 24,704,782	\$ 15,739,376	\$ 140,332,102
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,078,517.31	462,221.70	\$ -	\$ 1,078,517	\$ 462,222	\$ 1,540,739
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,403,321.02		\$ -	\$ 1,403,321	\$ -	\$ 1,403,321
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		5,613,284.07		\$ -	\$ 5,613,284	\$ -	\$ 5,613,284
9.4	Utility PM and Project Oversight	1.0	LS		1,403,321.02		\$ -	\$ 1,403,321	\$ -	\$ 1,403,321
9.5	Site Accommodation, Facilities, Storage	1.0	LS	1,403,321.02			\$ 1,403,321	\$ -	\$ -	\$ 1,403,321
	Engineering									
9.6	Design Engineering	1.00	LS		9,685,867.59		\$ -	\$ 9,685,868	\$ -	\$ 9,685,868
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		847,513.41		\$ -	\$ 847,513	\$ -	\$ 847,513
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,540,250.43		\$ -	\$ 4,540,250	\$ -	\$ 4,540,250
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,210,733.45		\$ -	\$ 1,210,733	\$ -	\$ 1,210,733
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		363,220.03		\$ -	\$ 363,220	\$ -	\$ 363,220
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			12,274,000.00	\$ -	\$ -	\$ 12,274,000	\$ 12,274,000
9.17	Legal Fees (Real estate)	1.00	LS		-	368,220.00	\$ -	\$ -	\$ 368,220	\$ 368,220
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 5,460,000	\$ -	\$ -	\$ 5,460,000	\$ 5,460,000
9.20	Sales Tax on Materials	8.80%	LS	99,887,943.22			\$ 8,790,139	\$ -	\$ -	\$ 8,790,139
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		140,332.10		\$ -	\$ 140,332	\$ -	\$ 140,332
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,193,460	\$ 26,306,557	\$ 18,573,542	\$ 55,073,559

Propel NY - TO52 AS6

3 - Shore Road 345 kV GIS Substation

Total: \$ 210,042,539

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Shore Road 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,560,984	\$ 8,254,607	\$ 5,340,843	\$ 18,156,434
2. SUBSTATION FOUNDATIONS	\$ 2,681,712	\$ 2,838,443	\$ 1,784,452	\$ 7,304,607
3. SUBSTATION STRUCTURES	\$ 1,068,782	\$ 555,441	\$ 284,470	\$ 1,908,693
4. MAJOR EQUIPMENT	\$ 67,324,182	\$ 10,382,854	\$ 6,860,553	\$ 84,567,589
5. LOW VOLTAGE & CONTROL CABLE	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH	\$ 655,081	\$ 363,964	\$ 150,412	\$ 1,169,457
7. GROUND GRID	\$ 139,293	\$ 100,038	\$ 23,138	\$ 262,469
8. CONTROL ENCLOSURE	\$ 1,476,102	\$ 1,201,368	\$ 393,734	\$ 3,071,204
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,831,996	\$ 19,938,260	\$ 5,960,461	\$ 33,730,718
Turnkey cost (HVDC, GIS)	\$ 10,734,857	\$ 6,440,914	\$ 4,293,943	\$ 21,469,714
Non-Turnkey cost	\$ 75,265,501	\$ 37,264,971	\$ 16,518,302	\$ 129,048,773
SUBTOTAL (Costs):	\$ 86,000,358	\$ 43,705,885	\$ 20,812,244	\$ 150,518,487
CONTRACTOR MARK-UP (OH&P):	\$ 14,191,882	\$ 7,094,150	\$ 3,230,931	\$ 24,516,962
SUBTOTAL:	\$ 100,192,240	\$ 50,800,035	\$ 24,043,175	\$ 175,035,450
CONTINGENCY ON ENTIRE PROJECT	\$ 20,038,448	\$ 10,160,007	\$ 4,808,635	\$ 35,007,090
TOTAL:	\$ 120,230,688	\$ 60,960,042	\$ 28,851,810	\$ 210,042,539

Description of Work: New greenfield 345 kV Shore Road Substation, to be located at 375 Shore Road, in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. The 345 kV Shore Road Substation will serve as the transition station and new connection for the existing LIPA) 138 kV Shore Road Substation. Two (2) new 345 kV underground terrestrial transmission lines with a PAR on each circuit will be converted into four (4) marine transmission lines for crossing Long Island Sound. Also, a 345 kV/138 kV power transformer in series with a 138 kV PAR will connect to the existing LIPA 138 kV substation. Lastly, three(3) 345 kV shunt reactors will be installed for compensation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3 - Shore Road 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 37,800	\$ 25,200	\$ 63,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,099	SY	4.85	7.20	4.80	\$ 15,030	\$ 22,313	\$ 14,875	\$ 52,218
1.4	Strip and Dispose Top Soil	5,647	CY		24.50	10.50	\$ -	\$ 138,343	\$ 59,290	\$ 197,633
1.5	Site Grading- Excavation for Substation Pad	169,400	CY		13.50	9.00	\$ -	\$ 2,286,900	\$ 1,524,600	\$ 3,811,500
1.6	Site Grading- Excavation for Substation Pad- Rock	8,470	CY		243.00	162.00	\$ -	\$ 2,058,210	\$ 1,372,140	\$ 3,430,350
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	91,476	CY		21.00	9.00	\$ -	\$ 1,920,996.00	\$ 823,284.00	\$ 2,744,280.00
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	137,214	CY		2.40	1.60	\$ -	\$ 329,314	\$ 219,542	\$ 548,856
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	91,476	CY	25.00	2.40	1.60	\$ 2,286,900	\$ 219,542	\$ 146,362	\$ 2,652,804
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	16,940	SY	11.00	6.00	4.00	\$ 186,340	\$ 101,640	\$ 67,760	\$ 355,740
1.12	Site Surfacing - Aggregate 6" Thick	16,940	SY	16.50	4.50	3.00	\$ 279,510	\$ 76,230	\$ 50,820	\$ 406,560
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,358	LF	13.85	13.85	6.92	\$ 18,806	\$ 18,806	\$ 9,403	\$ 47,014
1.14	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.15	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	488,434.80	76,800.00	76,104.00	\$ 488,435	\$ 76,800	\$ 76,104	\$ 641,339

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.17	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.18	Erosion Control-Silt fence install & remove	2,304	LF	2.41	3.16	0.72	\$ 5,553	\$ 7,281	\$ 1,659	\$ 14,492
1.19	Temporary fencing	1,536	LF	7.50	5.25	2.25	\$ 11,520	\$ 8,064	\$ 3,456	\$ 23,040
1.20	Substation entrance with asphalt	282	SY	19.50	26.00	19.50	\$ 5,499	\$ 7,332	\$ 5,499	\$ 18,330
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Retaining Wall	800	LF	1,560.00	1,170.00	1,170.00	\$ 1,248,000	\$ 936,000	\$ 936,000	\$ 3,120,000
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,560,984	\$ 8,254,607	\$ 5,340,843	\$ 18,156,434
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	142	CY	703.89	804.44	502.78	\$ 100,290	\$ 114,617	\$ 71,635	\$ 286,542
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph, low	22	CY	703.89	804.44	502.78	\$ 15,570	\$ 17,794	\$ 11,121	\$ 44,486
2.4	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, GIS air terminal	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.6	345kV, GIS support-1 Ph	16	CY	703.89	804.44	502.78	\$ 11,431	\$ 13,064	\$ 8,165	\$ 32,660
2.7	345kV, GIS support-3 Ph	330	CY	703.89	804.44	502.78	\$ 232,282	\$ 265,916	\$ 165,916	\$ 663,663
2.8	345kV, GIS Cable sealing end	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.9	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.11	345kV, Shunt Reactor with oil containment-150MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.12	345kV, Shunt Reactor with oil containment-75MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.13	345kV, Phase Angle Regulator with oil containment	706	CY	703.89	804.44	502.78	\$ 496,943	\$ 567,935	\$ 354,959	\$ 1,419,837
2.14	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Circuit Breaker (GIS), outdoor rated	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.16	345/138 Kv, Control Enclosure-BLDG with generator pad	213	CY	703.89	804.44	502.78	\$ 149,928	\$ 171,346	\$ 107,091	\$ 428,364
2.17	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.18	138kV, Bus support-3 Ph, low	16	CY	703.89	804.44	502.78	\$ 11,431	\$ 13,064	\$ 8,165	\$ 32,660
2.19	138kV, Bus support-1 Ph, low	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.20	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.22	Firewall Foundation	467	CY	703.89	804.44	502.78	\$ 328,911	\$ 375,899	\$ 234,937	\$ 939,747
2.23	Precast Firewall for transformer, PARs, reactors	16,680	SF	25.00	15.00	10.00	\$ 417,000	\$ 250,200	\$ 166,800	\$ 834,000
2.24	Precast Concrete Piles-12"X80'	-	EA	4,800.00	3,600.00	3,600.00	\$ -	\$ -	\$ -	\$ -
2.25	Local Control Cabinet foundation	7	CY	703.89	804.44	502.78	\$ 4,693	\$ 5,363	\$ 3,352	\$ 13,407
TOTAL - 345KV FOUNDATION							\$ 2,681,712	\$ 2,838,443	\$ 1,784,452	\$ 7,304,607
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	8	EA	23,400.00	14,040.00	9,360.00	\$ 187,200	\$ 112,320	\$ 74,880	\$ 374,400
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph, low	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.4	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.5	345kV, GIS air terminal	24	EA	8,346.00	5,758.74	3,839.16				\$ -
3.6	345kV, GIS support-1 Ph	4	EA	8,346.00	5,758.74	3,839.16				\$ -
3.7	345kV, GIS support-3 Ph	25	EA	4,810.00	2,886.00	1,924.00				\$ -
3.8	345kV, GIS Cable sealing end	6	EA	8,346.00	5,758.74	3,839.16				\$ -
3.9	345kV, CCVT	0	EA							\$ -
3.10	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.11	138kV, Bus support-1 Ph, low	3	EA	2,782.00	1,919.84	1,279.89	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.12	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.13	138kV, Cable sealing end	1	EA	4,066.40	1,443.00	962.00	\$ 4,066	\$ 1,443	\$ 962	\$ 6,471
3.16	AL. Bus Tubing, 5" SCH 80	300	LF	25.00	184.94	123.29	\$ 7,500	\$ 55,481	\$ 36,988	\$ 99,969
3.17	AL. Bus fittings	1	LS	9,000.00	9,000.00	4,500.00	\$ 9,000	\$ 9,000	\$ 4,500	\$ 22,500
3.18	Steel grating and support beams-transformer moat	302,960	LB	2.73	1.17	0.50	\$ 827,631	\$ 354,160	\$ 151,783	\$ 1,333,575
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,068,782	\$ 555,441	\$ 284,470	\$ 1,908,693
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	24	EA							
4.2	345kV, GIS- Cable sealing end	6	EA							
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28		\$ -	\$ -	\$ -
4.4	345/138KV, Power Transformer	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.5	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.6	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.7	345kV, Shunt Reactor with oil containment-75MVAR	2	EA	2,277,924.50	3,520.00	880.00	\$ 4,555,849	\$ 7,040	\$ 1,760	\$ 4,564,649
4.8	Transport & Testing- Shunt Reactor	3	EA		419,650.00	276,100.00	\$ -	\$ 1,258,950	\$ 828,300	\$ 2,087,250
4.9	345kV, Phase Angle Regulator	2	EA	16,120,693.00	3,520.00	880.00	\$ 32,241,386	\$ 7,040	\$ 1,760	\$ 32,250,186
4.10	Transport & Testing- Phase Angle Regulating Transformer, 345kV	2	EA		615,400.00	406,600.00	\$ -	\$ 1,230,800	\$ 813,200	\$ 2,044,000
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	8	EA	1,341,857.13	805,114.28	536,742.85	\$ 10,734,857	\$ 6,440,914	\$ 4,293,943	\$ 21,469,714
4.15	345kV, GIS Cable sealing end	18	EA				\$ -	\$ -	\$ -	\$ -
4.16	138kV, Phase Angle Regulator	1	EA	11,902,178.00	3,520.00	880.00	\$ 11,902,178	\$ 3,520	\$ 880	\$ 11,906,578
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.18	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300
4.20	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.21	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.22	345kV Gas-Insulated Bus Conductor	3,393	LF	550.00	275.00	82.50				\$ -
4.23	345kV Gas-Insulated Bus Conductor-elbow	90	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 67,324,182	\$ 10,382,854	\$ 6,860,553	\$ 84,567,589
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	49,500	LF	5.30	1.43	0.29	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,100	LF	11.15	10.80	5.40	\$ 90,315	\$ 87,480	\$ 43,740	\$ 221,535
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,125	LF	266.50	53.04	13.26	\$ 299,813	\$ 59,670	\$ 14,918	\$ 374,400
6.7										
6.10	138kV UG- Conduit	367	LF	81.00	107.00	57.00	\$ 29,700	\$ 39,233	\$ 20,900	\$ 89,833
6.11	138kV UG- Cable	1,100	LF	156.00	94.00	62.00	\$ 171,600	\$ 103,400	\$ 68,200	\$ 343,200
6.12	138kV UG- Termination	6	EA	9,360.00	11,700.00		\$ 56,160	\$ 70,200	\$ -	\$ 126,360
6.11	Fiber Optic Cable	367	LF	7.40	3.33	2.22	\$ 2,712	\$ 1,221	\$ 814	\$ 4,748
6.12	Ground Continuity Conductor	367	LF	13.04	7.53	5.02	\$ 4,781	\$ 2,760	\$ 1,840	\$ 9,381
TOTAL - CONDUIT & CABLE TRENCH							\$ 655,081	\$ 363,964	\$ 150,412	\$ 1,169,457
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	14,040.0	LF	2.09	3.42	1.46	\$ 29,358	\$ 47,951	\$ 20,550	\$ 97,859
7.2	Caweld, DSA, 4/0 , T, CROSS	384.0	EA	165.00	75.00		\$ 63,360	\$ 28,800	\$ -	\$ 92,160
7.3	Ground Rod, 3/4" x 15'	345.0	EA	135.00	67.50	7.50	\$ 46,575	\$ 23,288	\$ 2,588	\$ 72,450
TOTAL - GROUND GRID							\$ 139,293	\$ 100,038	\$ 23,138	\$ 262,469
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	318,133.59	222,693.51	95,440.08	\$ 318,134	\$ 222,694	\$ 95,440	\$ 636,267
8.2	Primary Line Relays (87L): SEL-411L	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.3	Backup Line Relays (87L): GE L90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.4	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,476,102	\$ 1,201,368	\$ 393,734	\$ 3,071,204
3 - Shore Road 345 kV GIS Substation							\$ 78,168,362	\$ 23,767,625	\$ 14,851,783	\$ 116,787,770

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		975,959.29	418,268.27	\$ -	\$ 975,959	\$ 418,268	\$ 1,394,228
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		953,180.56		\$ -	\$ 953,181	\$ -	\$ 953,181
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,812,722.23		\$ -	\$ 3,812,722	\$ -	\$ 3,812,722
9.4	Utility PM and Project Oversight	1.0	LS		953,180.56		\$ -	\$ 953,181	\$ -	\$ 953,181
9.5	Site Accommodation, Facilities, Storage	1.0	LS	953,180.56			\$ 953,181	\$ -	\$ -	\$ 953,181
	Engineering									
9.6	Design Engineering	1.00	LS		7,625,444.47		\$ -	\$ 7,625,444	\$ -	\$ 7,625,444
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		667,226.39		\$ -	\$ 667,226	\$ -	\$ 667,226
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,574,427.09		\$ -	\$ 3,574,427	\$ -	\$ 3,574,427
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		953,180.56		\$ -	\$ 953,181	\$ -	\$ 953,181
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		285,954.17		\$ -	\$ 285,954	\$ -	\$ 285,954
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,294,265.00	\$ -	\$ -	\$ 1,294,265	\$ 1,294,265
9.17	Legal Fees (Real estate)	1.00	LS		-	38,827.95	\$ -	\$ -	\$ 38,828	\$ 38,828
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 4,200,000	\$ -	\$ -	\$ 4,200,000	\$ 4,200,000
9.20	Sales Tax on Materials	8.80%	LS	78,168,361.75			\$ 6,878,816	\$ -	\$ -	\$ 6,878,816
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		116,787.77		\$ -	\$ 116,788	\$ -	\$ 116,788
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,831,996	\$ 19,938,260	\$ 5,960,461	\$ 33,730,718

Propel NY - TO52 AS6

4 - Ruland Road 345/138 kV Substation

Total: \$ 161,915,424

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
4 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS	\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES	\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960
4. MAJOR EQUIPMENT	\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH	\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID	\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE	\$ 1,433,684	\$ 1,171,676	\$ 381,008	\$ 2,986,368
TOTAL - CONTROL ENCLOSURE	\$ 6,327,783	\$ 17,796,366	\$ 4,770,929	\$ 28,895,079
SUBTOTAL (Costs):	\$ 68,523,955	\$ 33,122,286	\$ 12,700,810	\$ 114,347,051
CONTRACTOR MARK-UP (OH&P)	\$ 12,334,312	\$ 5,962,012	\$ 2,286,146	\$ 20,582,469
SUBTOTAL:	\$ 80,858,267	\$ 39,084,298	\$ 14,986,956	\$ 134,929,520
CONTINGENCY ON ENTIRE PROJECT	\$ 16,171,653	\$ 7,816,860	\$ 2,997,391	\$ 26,985,904
TOTAL:	\$ 97,029,920	\$ 46,901,157	\$ 17,984,347	\$ 161,915,424

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, to be located on Ruland Road in the Hamlet of Melville, Town of Huntington, Suffolk County. The New substation will consist of a 138 kV air insulated switchgear (“AIS”) six (6) position ring bus substation and a 345 kV AIS six (6) position ring bus substation interconnected by three (3) 345 kV/138 kV power transformers.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.3	ACRE	-	10,800.00	7,200.00	\$ -	\$ 68,040	\$ 45,360	\$ 113,400
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,535	SY	4.85	7.20	4.80	\$ 21,995	\$ 32,653	\$ 21,769	\$ 76,417
1.4	Strip and Dispose Top Soil	10,164	CY		24.50	10.50	\$ -	\$ 249,018	\$ 106,722	\$ 355,740
1.5	Site Grading- Excavation for Substation Pad	30,492	CY		9.00	6.00	\$ -	\$ 274,428	\$ 182,952	\$ 457,380
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	16,466	CY		21.00	9.00	\$ -	\$ 345,779.28	\$ 148,191.12	\$ 493,970.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	24,699	CY		2.40	1.60	\$ -	\$ 59,276	\$ 39,518	\$ 98,794
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	16,466	CY	25.00	2.40	1.60	\$ 411,642	\$ 39,518	\$ 26,345	\$ 477,505
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	30,492	SY	11.00	6.00	4.00	\$ 335,412	\$ 182,952	\$ 121,968	\$ 640,332
1.11	Site Surfacing - Aggregate 6" Thick	30,492	SY	16.50	4.50	3.00	\$ 503,118	\$ 137,214	\$ 91,476	\$ 731,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,005	LF	13.85	13.85	6.92	\$ 27,765	\$ 27,765	\$ 13,883	\$ 69,413
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	17,200	SF	1.50	1.50	1.00	\$ 25,800	\$ 25,800	\$ 17,200	\$ 68,800
1.17	Erosion Control-Silt fence install & remove	3,393	LF	2.41	3.16	0.72	\$ 8,177	\$ 10,722	\$ 2,443	\$ 21,342
1.18	Temporary fencing	2,262	LF	7.50	5.25	2.25	\$ 16,965	\$ 11,876	\$ 5,090	\$ 33,930
1.19	Substation entrance with asphalt	135	SY	19.50	26.00	19.50	\$ 2,637	\$ 3,516	\$ 2,637	\$ 8,789
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088
2.2	345kV, A Frame 70'	587	CY	703.89	804.44	502.78	\$ 412,871	\$ 471,852	\$ 294,908	\$ 1,179,631
2.3	345kV, Bus support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	293	CY	703.89	804.44	502.78	\$ 206,266	\$ 235,733	\$ 147,333	\$ 589,333
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.11	345kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.12	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	27	CY	703.89	804.44	502.78	\$ 18,770	\$ 21,452	\$ 13,407	\$ 53,629
2.22	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.23	138kV, Bus support-1 Ph, low	110	CY	703.89	804.44	502.78	\$ 77,160	\$ 88,183	\$ 55,114	\$ 220,457
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.26	138kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.27	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.28	Firewall Foundation	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.29	Precast Firewall for transformer, PARs, reactors	1,200	SF	25.00	15.00	10.00	\$ 30,000	\$ 18,000	\$ 12,000	\$ 60,000
2.30	Precast Concrete Piles-12"X80'	212	EA	18,000.00	3,200.00	2,800.00	\$ 3,816,000	\$ 678,400	\$ 593,600	\$ 5,088,000
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - 345KV FOUNDATION							\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'	4	EA	48,100.00	28,860.00	19,240.00	\$ 192,400	\$ 115,440	\$ 76,960	\$ 384,800
3.3	345kV, Bus support-3 Ph	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	37	EA	4,810.00	2,886.00	1,924.00	\$ 177,970	\$ 106,782	\$ 71,188	\$ 355,940
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.11	345kV, CCVT	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.12	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	27	EA	2,782.00	1,919.84	1,279.89	\$ 75,114	\$ 51,836	\$ 34,557	\$ 161,507
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.17	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.18	138kV, A Frame 50'	3	EA	33,000.00	19,800.00	13,200.00	\$ 99,000	\$ 59,400	\$ 39,600	\$ 198,000
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	2,850	LF	25.00	184.94	123.29	\$ 71,250	\$ 527,073	\$ 351,382	\$ 949,706
3.22	AL. Bus fittings	1	LS	85,500.00	85,500.00	42,750.00	\$ 85,500	\$ 85,500	\$ 42,750	\$ 213,750
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.4	345kV, CCVT	18	EA	16,900.00	15,941.99	6,832.28	\$ 304,200	\$ 286,956	\$ 122,981	\$ 714,137
4.5	345kV, Disconnect Switch	2	EA	68,900.00	21,703.50	9,301.50	\$ 137,800	\$ 43,407	\$ 18,603	\$ 199,810
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.7	Transport & Testing- Transformer	3	EA		834,400.00	357,600.00	\$ -	\$ 2,503,200	\$ 1,072,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	2	EA	2,901,774.00	3,520.00	880.00	\$ 5,803,548	\$ 7,040	\$ 1,760	\$ 5,812,348
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	\$ -	\$ 769,300	\$ 329,700	\$ 1,099,000
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	16,086,712.00	3,520.00	880.00	\$ 16,086,712	\$ 3,520	\$ 880	\$ 16,091,112
4.12	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.13	345kV, Circuit Breaker (PASS)	8	EA	980,000.00	57,239.00	24,531.00	\$ 7,840,000	\$ 457,912	\$ 196,248	\$ 8,494,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	\$ 50,700	\$ 32,760	\$ 14,040	\$ 97,500
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker (PASS)	6	EA	510,000.00	13,559.00	5,811.00	\$ 3,060,000	\$ 81,354	\$ 34,866	\$ 3,176,220
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.22	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	\$ 180,000	\$ 143,462	\$ 61,484	\$ 384,945
4.23	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	114,000	LF	5.30	1.43	0.29	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	22,500	LF	11.15	10.80	5.40	\$ 250,875	\$ 243,000	\$ 121,500	\$ 615,375
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	601	LF	266.50	53.04	13.26	\$ 160,167	\$ 31,877	\$ 7,969	\$ 200,013
6.7										
6.8	138kV UG- Conduit	1,775	LF	81.00	107.00	57.00	\$ 143,775	\$ 189,925	\$ 101,175	\$ 434,875
6.9	138kV UG- Cable	6,325	LF	156.00	94.00	62.00	\$ 986,700	\$ 594,550	\$ 392,150	\$ 1,973,400
6.10	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.11	Fiber Optic Cable	1,775	LF	7.40	3.33	2.22	\$ 13,130	\$ 5,912	\$ 3,941	\$ 22,983
6.12	Ground Continuity Conductor	1,775	LF	13.04	7.53	5.02	\$ 23,144	\$ 13,360	\$ 8,907	\$ 45,412
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,334	LF	2.09	3.42	1.46	\$ 61,337	\$ 100,184	\$ 42,936	\$ 204,458
7.2	Caweld, DSA, 4/0 , T, CROSS	780	EA	165.00	75.00		\$ 128,700	\$ 58,500	\$ -	\$ 187,200
7.3	Ground Rod, 3/4" x 15'	722	EA	135.00	67.50	7.50	\$ 97,470	\$ 48,735	\$ 5,415	\$ 151,620
TOTAL - GROUND GRID							\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.5	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,433,684	\$ 1,171,676	\$ 381,008	\$ 2,986,368
4 - Ruland Road 345/138 kV Substation							\$ 62,196,172	\$ 15,325,920	\$ 7,929,881	\$ 85,451,972
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		813,953.01	348,837.01	\$ -	\$ 813,953	\$ 348,837	\$ 1,162,790
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,418,078.90		\$ -	\$ 3,418,079	\$ -	\$ 3,418,079
9.4	Utility PM and Project Oversight	1.0	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.5	Site Accommodation, Facilities, Storage	1.0	LS	854,519.72			\$ 854,520	\$ -	\$ -	\$ 854,520
	Engineering									
9.6	Design Engineering	1.00	LS		6,836,157.79		\$ -	\$ 6,836,158	\$ -	\$ 6,836,158
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		598,163.81		\$ -	\$ 598,164	\$ -	\$ 598,164
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,204,448.97		\$ -	\$ 3,204,449	\$ -	\$ 3,204,449
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		256,355.92		\$ -	\$ 256,356	\$ -	\$ 256,356
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,220,000	\$ -	\$ -	\$ 3,220,000	\$ 3,220,000
9.20	Sales Tax on Materials	8.80%	LS	62,196,172.06			\$ 5,473,263	\$ -	\$ -	\$ 5,473,263
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		85,451.97		\$ -	\$ 85,452	\$ -	\$ 85,452
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,327,783	\$ 17,796,366	\$ 4,770,929	\$ 28,895,079

Propel NY - TO52 AS6

5 - Barrett 345 kV Substation

Total: \$ 117,046,754

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 906,787	\$ 966,999	\$ 543,829	\$ 2,417,615
2. SUBSTATION FOUNDATIONS	\$ 4,579,333	\$ 2,166,036	\$ 1,453,545	\$ 8,198,913
3. SUBSTATION STRUCTURES	\$ 266,997	\$ 258,797	\$ 169,476	\$ 695,270
4. MAJOR EQUIPMENT	\$ 36,428,028	\$ 3,794,774	\$ 1,623,189	\$ 41,845,990
5. LOW VOLTAGE & CONTROL CABLE	\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
6. CONDUIT & CABLE TRENCH	\$ 190,409	\$ 86,807	\$ 37,092	\$ 314,308
7. GROUND GRID	\$ 121,722	\$ 87,561	\$ 20,297	\$ 229,580
8. CONTROL ENCLOSURE	\$ 1,050,255	\$ 873,416	\$ 295,839	\$ 2,219,510
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,407,133	\$ 15,072,359	\$ 7,048,965	\$ 26,528,456
SUBTOTAL (Costs):	\$ 48,109,587	\$ 23,349,723	\$ 11,200,828	\$ 82,660,137
CONTRACTOR MARK-UP (OH&P)	\$ 8,659,726	\$ 4,202,950	\$ 2,016,149	\$ 14,878,825
SUBTOTAL:	\$ 56,769,313	\$ 27,552,673	\$ 13,216,977	\$ 97,538,962
CONTINGENCY ON ENTIRE PROJECT	\$ 11,353,863	\$ 5,510,535	\$ 2,643,395	\$ 19,507,792
TOTAL:	\$ 68,123,175	\$ 33,063,207	\$ 15,860,372	\$ 117,046,754

Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of Hempstead, Nassau County. The New 345 kV Barrett Substation will serve as the main Point of Interconnection (“POI”)between the generation and transmission operator. The New substation will step up the 138 kV POI voltage to 345 kV, and a new 345 kV underground line will be connected

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 43,200	\$ 28,800	\$ 72,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,053	SY	4.85	7.20	4.80	\$ 14,807	\$ 21,982	\$ 14,654	\$ 51,443
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$ -	\$ 158,107	\$ 67,760	\$ 225,867
1.5	Site Grading- Excavation for Substation Pad	19,360	CY		9.00	6.00	\$ -	\$ 174,240	\$ 116,160	\$ 290,400
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	10,454	CY		21.00	9.00	\$ -	\$ 219,542.40	\$ 94,089.60	\$ 313,632.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	15,682	CY		2.40	1.60	\$ -	\$ 37,636	\$ 25,091	\$ 62,726
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	10,454	CY	25.00	2.40	1.60	\$ 261,360	\$ 25,091	\$ 16,727	\$ 303,178
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	19,360	SY	11.00	6.00	4.00	\$ 212,960	\$ 116,160	\$ 77,440	\$ 406,560
1.11	Site Surfacing - Aggregate 6" Thick	19,360	SY	16.50	4.50	3.00	\$ 319,440	\$ 87,120	\$ 58,080	\$ 464,640
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,286	LF	13.85	13.85	6.92	\$ 17,809	\$ 17,809	\$ 8,904	\$ 44,521
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH AND INLET	2	EA	11,160.00	9,600.00	6,342.00	\$ 22,320	\$ 19,200	\$ 12,684	\$ 54,204
1.16	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.17	Erosion Control-Silt fence install & remove	2,481	LF	2.41	3.16	0.72	\$ 5,979	\$ 7,840	\$ 1,786	\$ 15,605
1.18	Temporary fencing	1,654	LF	7.50	5.25	2.25	\$ 12,405	\$ 8,684	\$ 3,722	\$ 24,810
1.19	Substation entrance with asphalt	490	SY	19.50	26.00	19.50	\$ 9,555	\$ 12,740	\$ 9,555	\$ 31,850
1.20	Concrete curb	160	LF	26.00	27.30	11.70	\$ 4,160	\$ 4,368	\$ 1,872	\$ 10,400
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 906,787	\$ 966,999	\$ 543,829	\$ 2,417,615
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kv, Lightning mast foundation	71	CY	703.89	804.44	502.78	\$ 50,145	\$ 57,308	\$ 35,818	\$ 143,271
2.2	345kv, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.3	345kv, Bus support-1 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.4	345kv, Cable sealing end	18	CY	703.89	804.44	502.78	\$ 12,797	\$ 14,625	\$ 9,140	\$ 36,562
2.5	345kv, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.6	345/138KV, Power Transformer with oil containment	550	CY	703.89	804.44	502.78	\$ 387,137	\$ 442,442	\$ 276,526	\$ 1,106,105
2.7	345kv, Shunt Reactor with oil containment	275	CY	703.89	804.44	502.78	\$ 193,568	\$ 221,221	\$ 138,263	\$ 553,053
2.8	345kv, Circuit Breaker (PASS)	60	CY	703.89	804.44	502.78	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
2.9	345/138 Kv, Control Enclosure-BLDG with generator pad	138	CY	703.89	804.44	502.78	\$ 97,136	\$ 111,013	\$ 69,383	\$ 277,532
2.10	138kv, Phase Angle Regulator	294	CY	703.89	804.44	502.78	\$ 206,942	\$ 236,505	\$ 147,816	\$ 591,263
2.11	138kv, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.12	138kv, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.13	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.14	Precast Firewall for transformer	5,100	SF	25.00	15.00	10.00	\$ 127,500	\$ 76,500	\$ 51,000	\$ 255,000
2.15	Precast Concrete Piles-12"X80'	158	EA	18,000.00	3,200.00	2,800.00	\$ 2,844,000	\$ 505,600	\$ 442,400	\$ 3,792,000
2.16	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 4,579,333	\$ 2,166,036	\$ 1,453,545	\$ 8,198,913

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast- 90'	4	EA	23,400.00	14,040.00	9,360.00	\$ 93,600	\$ 56,160	\$ 37,440	\$ 187,200
3.2	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.3	345kV, Bus support-1 Ph	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.4	345kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.5	345kV, CCVT	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.6	138kV, Disconnect Switch	2	EA	12,251.20	3,928.86	2,619.24	\$ 24,502	\$ 7,858	\$ 5,238	\$ 37,599
3.7	138kV, Cable sealing end	2	EA	4,066.40	1,443.00	962.00	\$ 8,133	\$ 2,886	\$ 1,924	\$ 12,943
3.8	AL. Bus Tubing, 5" SCH 80	611	LF	25.00	184.94	123.29	\$ 15,275	\$ 112,997	\$ 75,331	\$ 203,604
3.9	AL. Bus fittings	1	LS	18,330.00	18,330.00	9,165.00	\$ 18,330	\$ 18,330	\$ 9,165	\$ 45,825
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 266,997	\$ 258,797	\$ 169,476	\$ 695,270
4. MAJOR EQUIPMENT										
4.1	345/138kV, Power Transformer	2	EA	4,420,000.00	3,520.00	880.00	\$ 8,840,000	\$ 7,040	\$ 1,760	\$ 8,848,800
4.2	Transport & Testing- Transformer	2	EA		834,400.00	357,600.00	\$ -	\$ 1,668,800	\$ 715,200	\$ 2,384,000
4.3	Shunt Reactor, 345kV	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264
4.4	Transport & Testing- Shunt Reactor	1	EA		323,400.00	138,600.00	\$ -	\$ 323,400	\$ 138,600	\$ 462,000
4.5	345kV Circuit Breakers, PASS	3	EA	980,000.00	57,239.00	24,531.00	\$ 2,940,000	\$ 171,717	\$ 73,593	\$ 3,185,310
4.6	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.7	345kV, CCVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.8	345kV, Surge arrester	3	EA	8,450.00	4,200.00	1,800.00	\$ 25,350	\$ 12,600	\$ 5,400	\$ 43,350
4.9	Phase Angle Regulating Transformer, 138kV	2	EA	10,713,172.00	3,520.00	880.00	\$ 21,426,344	\$ 7,040	\$ 1,760	\$ 21,435,144
4.10	Transport & Testing- Phase Angle Regulating Transformer, 138kV	2	EA		701,400.00	300,600.00	\$ -	\$ 1,402,800	\$ 601,200	\$ 2,004,000
4.11	138kV, Cable sealing end	6	EA	11,600.00	1,050.00	450.00	\$ 69,600	\$ 6,300	\$ 2,700	\$ 78,600
4.12	138kV, Disconnect Switch- 3 Phase	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.13	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.14	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 36,428,028	\$ 3,794,774	\$ 1,623,189	\$ 41,845,990
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	30,000	LF	5.30	1.43	0.29	\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,700	LF	11.15	10.80	5.40	\$ 63,555	\$ 61,560	\$ 30,780	\$ 155,895
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	476	LF	266.50	53.04	13.26	\$ 126,854	\$ 25,247	\$ 6,312	\$ 158,413
6.7							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 190,409	\$ 86,807	\$ 37,092	\$ 314,308
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,330	LF	2.09	3.42	1.46	\$ 25,782	\$ 42,111	\$ 18,047	\$ 85,940
7.2	Caweld, DSA, 4/0 , T, CROSS	336	EA	165.00	75.00		\$ 55,440	\$ 25,200	\$ -	\$ 80,640
7.3	Ground Rod, 3/4" x 15'	300	EA	135.00	67.50	7.50	\$ 40,500	\$ 20,250	\$ 2,250	\$ 63,000
TOTAL - GROUND GRID							\$ 121,722	\$ 87,561	\$ 20,297	\$ 229,580
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	190,880.15	133,616.11	57,264.05	\$ 190,880	\$ 133,616	\$ 57,264	\$ 381,760
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,050,255	\$ 873,416	\$ 295,839	\$ 2,219,510
5 - Barrett 345 kV Substation							\$ 43,702,454	\$ 8,277,364	\$ 4,151,863	\$ 56,131,681
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		435,022.94	186,438.40	\$ -	\$ 435,023	\$ 186,438	\$ 621,461
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,245,267.24		\$ -	\$ 2,245,267	\$ -	\$ 2,245,267
9.4	Utility PM and Project Oversight	1.0	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.5	Site Accommodation, Facilities, Storage	1.0	LS	561,316.81			\$ 561,317	\$ -	\$ -	\$ 561,317
	Engineering									
9.6	Design Engineering	1.00	LS		4,490,534.48		\$ -	\$ 4,490,534	\$ -	\$ 4,490,534
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		392,921.77		\$ -	\$ 392,922	\$ -	\$ 392,922
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,104,938.04		\$ -	\$ 2,104,938	\$ -	\$ 2,104,938
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.13	Environmental-special studies/investigation	1.00	LS		3,475,000.00		\$ -	\$ 3,475,000	\$ -	\$ 3,475,000
9.14	Warranties / LOC's	1.00	LS		168,395.04		\$ -	\$ 168,395	\$ -	\$ 168,395
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			4,401,385.00	\$ -	\$ -	\$ 4,401,385	\$ 4,401,385
9.17	Legal Fees (Real estate)	1.00	LS		-	132,041.55	\$ -	\$ -	\$ 132,042	\$ 132,042
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,320,000	\$ -	\$ -	\$ 2,320,000	\$ 2,320,000
9.20	Sales Tax on Materials	8.80%	LS	43,702,454.27			\$ 3,845,816	\$ -	\$ -	\$ 3,845,816
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		56,131.68		\$ -	\$ 56,132	\$ -	\$ 56,132
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,407,133	\$ 15,072,359	\$ 7,048,965	\$ 26,528,456

Propel NY - TO52 AS6

6 - Existing 345 kV Tremont Substation GIS Interconnection

Total: \$ 32,771,373

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
6 - Existing 345 kV Tremont Substation_GIS_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS	\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH	\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID	\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE	\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283
Turnkey cost (HVDC, GIS)	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
Non-Turnkey cost	\$ 4,776,525	\$ 3,457,247	\$ 1,770,071	\$ 10,003,843
SUBTOTAL (Costs):	\$ 12,090,177	\$ 7,845,439	\$ 4,695,532	\$ 24,631,147
CONTRACTOR MARK-UP (OH&P):	\$ 1,298,594	\$ 885,596	\$ 494,140	\$ 2,678,330
SUBTOTAL:	\$ 13,388,771	\$ 8,731,035	\$ 5,189,672	\$ 27,309,477
CONTINGENCY ON ENTIRE PROJECT	\$ 2,677,754	\$ 1,746,207	\$ 1,037,934	\$ 5,461,895
TOTAL:	\$ 16,066,525	\$ 10,477,241	\$ 6,227,606	\$ 32,771,373

Description of Work: The existing Consolidated Edison Company of New York, Inc. (“Con Edison”) Tremont Substation, located in the Borough of the Bronx, New York City, Bronx County. Tremont Substation is an existing 345 kV AIS substation fed by a single underground 345 kV Line, X-28, which is a Con Edison transmission circuit. The X-28 circuit is connected to a common rigid bus that feeds two (2) 345 kV / 138 kV transformers in parallel. The Solution consists of the termination of a new 345 kV circuit, which requires installing a new 345 kV GIS six-position ring bus within the existing fence-line of the substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing 345 kV Tremont Substation_GIS_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	825	LF	2.41	3.16	0.72	\$ 1,988	\$ 2,607	\$ 594	\$ 5,189
1.18	Temporary fencing	300	LF	7.50	5.25	2.25	\$ 2,250	\$ 1,575	\$ 675	\$ 4,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.8	345kV, GIS to air bushing	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.9	345kV, GIS support-1 Ph	45	CY	703.89	804.44	502.78	\$ 31,436	\$ 35,926	\$ 22,454	\$ 89,816
2.10	345kV, GIS support-3 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.11	345kV, GIS Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	125	CY	703.89	804.44	502.78	\$ 87,986	\$ 100,555	\$ 62,847	\$ 251,388
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	93	EA	18,000.00	3,200.00	2,800.00	\$ 1,674,000	\$ 297,600	\$ 260,400	\$ 2,232,000
2.33	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	12	EA	8,346.00	5,758.74	3,839.16				
3.8	345kV, GIS to air bushing	9	EA	4,810.00	2,886.00	1,924.00				
3.9	345kV, GIS support-1 Ph	11	EA	4,810.00	2,886.00	1,924.00				
3.10	345kV, GIS support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16				
3.11	345kV, GIS Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16				
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.4	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.5	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.6	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,218,942.00	731,365.20	487,576.80	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
4.13	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.15	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.16	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	23,400	LF	5.30	1.43	0.29	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,452	LF	2.09	3.42	1.46	\$ 3,036	\$ 4,959	\$ 2,125	\$ 10,120
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	171,028.62	119,720.03	51,308.59	\$ 171,029	\$ 119,720	\$ 51,309	\$ 342,057
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
6 - Existing 345 kV Tremont Substation_GIS_Interconnection							\$ 11,049,919	\$ 6,363,269	\$ 4,000,677	\$ 21,413,864
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		106,760.29	45,754.41	\$ -	\$ 106,760	\$ 45,754	\$ 152,515
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		271,462.42		\$ -	\$ 271,462	\$ -	\$ 271,462
9.4	Utility PM and Project Oversight	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.5	Site Accommodation, Facilities, Storage	1.0	LS	67,865.60			\$ 67,866	\$ -	\$ -	\$ 67,866
	Engineering									
9.6	Design Engineering	1.00	LS		542,924.84		\$ -	\$ 542,925	\$ -	\$ 542,925
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		47,505.92		\$ -	\$ 47,506	\$ -	\$ 47,506
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		254,496.02		\$ -	\$ 254,496	\$ -	\$ 254,496
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		20,359.68		\$ -	\$ 20,360	\$ -	\$ 20,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			83,963.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	2,518.89	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 640,000	\$ -	\$ -	\$ 640,000	\$ 640,000
9.20	Sales Tax on Materials	8.80%	LS	11,049,918.55			\$ 972,393	\$ -	\$ -	\$ 972,393
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		21,413.86		\$ -	\$ 21,414	\$ -	\$ 21,414
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283

Propel NY - TO52 AS6

7 - Existing Sprain Brook 345 kV Interconnection

Total: \$ 40,574,867

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
7 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 212,245	\$ 195,170	\$ 108,661	\$ 516,077
2. SUBSTATION FOUNDATIONS	\$ 559,985	\$ 639,983	\$ 399,989	\$ 1,599,957
3. SUBSTATION STRUCTURES	\$ 512,697	\$ 521,222	\$ 316,834	\$ 1,350,753
4. MAJOR EQUIPMENT	\$ 11,619,255	\$ 3,576,445	\$ 2,331,173	\$ 17,526,873
5. LOW VOLTAGE & CONTROL CABLE	\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
6. CONDUIT & CABLE TRENCH	\$ 971,587	\$ 618,043	\$ 347,203	\$ 1,936,833
7. GROUND GRID	\$ 104,399	\$ 68,802	\$ 13,147	\$ 186,348
8. CONTROL ENCLOSURE	\$ 469,219	\$ 375,375	\$ 93,844	\$ 938,437
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,430,705	\$ 3,072,876	\$ 882,204	\$ 5,385,785
Turnkey cost (HVDC, GIS)	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
Non-Turnkey cost	\$ 11,242,268	\$ 6,239,127	\$ 2,589,547	\$ 20,070,942
SUBTOTAL (Costs):	\$ 16,019,946	\$ 9,105,733	\$ 4,500,618	\$ 29,626,298
CONTRACTOR MARK-UP (OH&P):	\$ 2,310,269	\$ 1,295,039	\$ 580,783	\$ 4,186,091
SUBTOTAL:	\$ 18,330,215	\$ 10,400,773	\$ 5,081,401	\$ 33,812,389
CONTINGENCY ON ENTIRE PROJECT	\$ 3,666,043	\$ 2,080,155	\$ 1,016,280	\$ 6,762,478
TOTAL:	\$ 21,996,258	\$ 12,480,927	\$ 6,097,681	\$ 40,574,867

Description of Work: Interconnection Facilities to the existing Con Edison Sprain Brook Substation, located in the City of Yonkers, Westchester County. Sprain Brook Substation is an existing 345 kV AIS substation with a BAAH configuration. The Solution includes installing two new underground 345 kV lines each with a shunt reactor each, in the new bay position

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - Existing Sprain Brook 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,640	\$ 5,760	\$ 14,400
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	962	SY	4.85	7.20	4.80	\$ 4,667	\$ 6,928	\$ 4,619	\$ 16,213
1.4	Strip and Dispose Top Soil	1,291	CY		24.50	10.50	\$ -	\$ 31,621	\$ 13,552	\$ 45,173
1.5	Site Grading- Excavation for Substation Pad	3,872	CY		9.00	6.00	\$ -	\$ 34,848	\$ 23,232	\$ 58,080
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,091	CY		21.00	9.00	\$ -	\$ 43,908.48	\$ 18,817.92	\$ 62,726.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,136	CY		2.40	1.60	\$ -	\$ 7,527	\$ 5,018	\$ 12,545
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,091	CY	25.00	2.40	1.60	\$ 52,272	\$ 5,018	\$ 3,345	\$ 60,636
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,872	SY	11.00	6.00	4.00	\$ 42,592	\$ 23,232	\$ 15,488	\$ 81,312
1.11	Site Surfacing - Aggregate 6" Thick	3,872	SY	16.50	4.50	3.00	\$ 63,888	\$ 17,424	\$ 11,616	\$ 92,928
1.12	7' Station Fence w/ Barbed Wire & Grounding	350	LF	13.85	13.85	6.92	\$ 4,847	\$ 4,847	\$ 2,423	\$ 12,117
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	1	LS	40,089.60	7,680.00	3,624.00	\$ 40,090	\$ 7,680	\$ 3,624	\$ 51,394
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.17	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.18	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.20	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 212,245	\$ 195,170	\$ 108,661	\$ 516,077
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	188	CY	703.89	804.44	502.78	\$ 132,344	\$ 151,251	\$ 94,532	\$ 378,127
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	37	CY	703.89	804.44	502.78	\$ 25,720	\$ 29,394	\$ 18,371	\$ 73,486
2.8	345kV, GIS to air bushing	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.9	345kV, GIS support-1 Ph	24	CY	703.89	804.44	502.78	\$ 17,147	\$ 19,596	\$ 12,248	\$ 48,990
2.10	345kV, GIS support-3 Ph	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.11	345kV, GIS Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.12	345kV, Cable sealing end	53	CY	703.89	804.44	502.78	\$ 37,165	\$ 42,474	\$ 26,547	\$ 106,186
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-75MVAR	200	CY	703.89	804.44	502.78	\$ 140,777	\$ 160,888	\$ 100,555	\$ 402,220
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.20	345kV, Circuit Breaker (GIS), outdoor rated	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'		EA							
2.33	Local Control Cabinet foundation	3	CY	703.89	804.44	502.78	\$ 2,086	\$ 2,384	\$ 1,490	\$ 5,959
TOTAL - 345KV FOUNDATION							\$ 559,985	\$ 639,983	\$ 399,989	\$ 1,599,957
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	17	EA	8,346.00	5,758.74	3,839.16	\$ 141,882	\$ 97,899	\$ 65,266	\$ 305,046
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	9	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.12	345kV, Cable sealing end	4	EA	8,346.00	5,758.74	3,839.16	\$ 33,384	\$ 23,035	\$ 15,357	\$ 71,776
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	1,311	LF	25.00	184.94	123.29	\$ 32,775	\$ 242,454	\$ 161,636	\$ 436,865
3.24	AL. Bus fittings	1	LS	39,330.00	39,330.00	19,665.00	\$ 39,330	\$ 39,330	\$ 19,665	\$ 98,325
3.25	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 512,697	\$ 521,222	\$ 316,834	\$ 1,350,753
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -			
4.2	345kV, GIS fast acting GND SW	9	EA				\$ -			
4.3	345kV, GIS to air bushing	6	EA				\$ -			
4.4	345kV, GIS Cable sealing end	6	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	12	EA	27,144.00	5,460.00	2,340.00	\$ 325,728	\$ 65,520	\$ 28,080	\$ 419,328
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-75MVAR	2	EA	2,277,924.50	3,520.00	880.00	\$ 4,555,849	\$ 7,040	\$ 1,760	\$ 4,564,649
4.12	Transport & Testing- Shunt Reactor	2	EA		261,400.00	170,600.00	\$ -	\$ 522,800	\$ 341,200	\$ 864,000
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	2	EA	980,000.00	57,239.00	24,531.00	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	4	EA	1,194,419.50	716,651.70	477,767.80	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor	564	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	10	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 11,619,255	\$ 3,576,445	\$ 2,331,173	\$ 17,526,873

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	26,400	LF	5.30	1.43	0.29	\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	4,200	LF	3.95	10.80	5.40	\$ 16,590	\$ 45,360	\$ 22,680	\$ 84,630
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit	1,000	LF	266.73	202.15	100.00	\$ 266,731	\$ 202,146	\$ 100,005	\$ 568,882
6.8	345kV UG- Cable	3,000	LF	167.00	100.20	66.80	\$ 501,000	\$ 300,600	\$ 200,400	\$ 1,002,000
6.9	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.14	Fiber Optic Cable	1,000	LF	7.40	3.33	2.22	\$ 7,397	\$ 3,331	\$ 2,220	\$ 12,948
6.15	Ground Continuity Conductor	1,000	LF	13.04	7.53	5.02	\$ 13,039	\$ 7,527	\$ 5,018	\$ 25,584
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 971,587	\$ 618,043	\$ 347,203	\$ 1,936,833
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	8,357	LF	2.09	3.42	1.46	\$ 17,474	\$ 28,542	\$ 12,232	\$ 58,248
7.2	Caweld, DSA, 4/0 , T, CROSS	427	EA	165.00	75.00		\$ 70,455	\$ 32,025	\$ -	\$ 102,480
7.3	Ground Rod, 3/4" x 15'	122	EA	135.00	67.50	7.50	\$ 16,470	\$ 8,235	\$ 915	\$ 25,620
TOTAL - GROUND GRID							\$ 104,399	\$ 68,802	\$ 13,147	\$ 186,348
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.9	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 469,219	\$ 375,375	\$ 93,844	\$ 938,437
7 - Existing Sprain Brook 345 kV_ Interconnection							\$ 14,589,241	\$ 6,032,857	\$ 3,618,415	\$ 24,240,513
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		170,575.78	73,103.91	\$ -	\$ 170,576	\$ 73,104	\$ 243,680
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		146,851.57		\$ -	\$ 146,852	\$ -	\$ 146,852
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		587,406.28		\$ -	\$ 587,406	\$ -	\$ 587,406
9.4	Utility PM and Project Oversight	1.0	LS		146,851.57		\$ -	\$ 146,852	\$ -	\$ 146,852
9.5	Site Accommodation, Facilities, Storage	1.0	LS	146,851.57			\$ 146,852	\$ -	\$ -	\$ 146,852
	Engineering									
9.6	Design Engineering	1.00	LS		1,174,812.56		\$ -	\$ 1,174,813	\$ -	\$ 1,174,813
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		66,887.49		\$ -	\$ 66,887	\$ -	\$ 66,887
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		550,693.39		\$ -	\$ 550,693	\$ -	\$ 550,693
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		146,851.57		\$ -	\$ 146,852	\$ -	\$ 146,852
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		44,055.47		\$ -	\$ 44,055	\$ -	\$ 44,055
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			716,770.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.17	Legal Fees (Real estate)	-	LS		-	21,503.10	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 800,000	\$ -	\$ -	\$ 800,000	\$ 800,000
9.20	Sales Tax on Materials	8.80%	LS	14,589,241.30			\$ 1,283,853	\$ -	\$ -	\$ 1,283,853
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		24,240.51		\$ -	\$ 24,241	\$ -	\$ 24,241
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,430,705	\$ 3,072,876	\$ 882,204	\$ 5,385,785

Propel NY - TO52 AS6

8 - Existing Ruland 138 kV Upgrade & Interconnection

Total: \$ 9,339,029

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
8 - Existing Ruland 138 kV_ Upgrade & Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 128,372	\$ 144,027	\$ 80,858	\$ 353,257
2. SUBSTATION FOUNDATIONS	\$ 552,928	\$ 423,460	\$ 274,263	\$ 1,250,651
3. SUBSTATION STRUCTURES	\$ 160,564	\$ 121,039	\$ 114,383	\$ 395,986
4. MAJOR EQUIPMENT	\$ 1,478,428	\$ 194,390	\$ 81,596	\$ 1,754,413
5. LOW VOLTAGE & CONTROL CABLE	\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
6. CONDUIT & CABLE TRENCH	\$ 322,346	\$ 213,089	\$ 100,110	\$ 635,545
7. GROUND GRID	\$ 62,882	\$ 45,524	\$ 10,639	\$ 119,045
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 311,900	\$ 1,073,391	\$ 225,205	\$ 1,610,496
SUBTOTAL (Costs):	\$ 3,289,756	\$ 2,378,925	\$ 926,678	\$ 6,595,359
CONTRACTOR MARK-UP (OH&P)	\$ 592,156	\$ 428,207	\$ 166,802	\$ 1,187,165
SUBTOTAL:	\$ 3,881,912	\$ 2,807,132	\$ 1,093,480	\$ 7,782,524
CONTINGENCY ON ENTIRE PROJECT	\$ 776,382	\$ 561,426	\$ 218,696	\$ 1,556,505
TOTAL:	\$ 4,658,294	\$ 3,368,558	\$ 1,312,176	\$ 9,339,029

Description of Work: Upgrades and Potential Interconnection Facilities to the existing LIPA Ruland Road Substation, located in the Hamlet of Melville, Town of Huntington, Suffolk County. Ruland Road Substation is an existing 138 kV AIS substation configured with six (6) BAAH bays. The Solution includes installing two (2) air core reactors in series to the 138 kV Lines 138-561 and 138-562, respectively, which are proposed as Upgrades and two (2) 138 kV circuit breakers, which are proposed as Potential Interconnection Facilities.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.6	ACRE	-	10,800.00	7,200.00	\$ -	\$ 6,480	\$ 4,320	\$ 10,800
1.2	Demolition	1	LS	-	4,800.00	3,200.00	\$ -	\$ 4,800	\$ 3,200	\$ 8,000
1.3	New Access Road - 20'	489	SY	4.85	7.20	4.80	\$ 2,371	\$ 3,520	\$ 2,347	\$ 8,238
1.4	Strip and Dispose Top Soil	968	CY		24.50	10.50	\$ -	\$ 23,716	\$ 10,164	\$ 33,880
1.5	Site Grading- Excavation for Substation Pad	2,904	CY		9.00	6.00	\$ -	\$ 26,136	\$ 17,424	\$ 43,560
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,568	CY		21.00	9.00	\$ -	\$ 32,931.36	\$ 14,113.44	\$ 47,044.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,352	CY		2.40	1.60	\$ -	\$ 5,645	\$ 3,764	\$ 9,409
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,568	CY	25.00	2.40	1.60	\$ 39,204	\$ 3,764	\$ 2,509	\$ 45,477
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	2,904	SY	11.00	6.00	4.00	\$ 31,944	\$ 17,424	\$ 11,616	\$ 60,984
1.11	Site Surfacing - Aggregate 6" Thick	2,904	SY	16.50	4.50	3.00	\$ 47,916	\$ 13,068	\$ 8,712	\$ 69,696
1.12	7" Station Fence w/ Barbed Wire & Grounding	220	LF	13.85	13.85	6.92	\$ 3,047	\$ 3,047	\$ 1,523	\$ 7,616
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 128,372	\$ 144,027	\$ 80,858	\$ 353,257
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	\$ 116,803	\$ 133,489	\$ 83,430	\$ 333,722
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	\$ 102,429	\$ 117,062	\$ 73,164	\$ 292,655
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 552,928	\$ 423,460	\$ 274,263	\$ 1,250,651
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	-	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, CCVT	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	\$ 85,800	\$ 51,480	\$ 68,640	\$ 205,920
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	126	LF	25.00	184.94	123.29	\$ 3,150	\$ 23,302	\$ 15,535	\$ 41,987
3.26	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	\$ 3,780	\$ 3,780	\$ 1,890	\$ 9,450
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 160,564	\$ 121,039	\$ 114,383	\$ 395,986
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	6	EA	10,000.00	7,970.08	3,415.75	\$ 60,000	\$ 47,821	\$ 20,495	\$ 128,315
4.24	138kV, Air core reactors (3 Ph)	6	EA	40,500.00	6,500.00	2,500.00	\$ 243,000	\$ 39,000	\$ 15,000	\$ 297,000
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,478,428	\$ 194,390	\$ 81,596	\$ 1,754,413
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	19,200	LF	5.30	1.43	0.29	\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,900	LF	11.15	10.80	5.40	\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	300	LF	266.50	53.04	13.26	\$ 79,950	\$ 15,912	\$ 3,978	\$ 99,840
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.9	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.12	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
TOTAL - CONDUIT & CABLE TRENCH							\$ 322,346	\$ 213,089	\$ 100,110	\$ 635,545
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,500	LF	2.09	3.42	1.46	\$ 13,592	\$ 22,199	\$ 9,514	\$ 45,305
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		\$ 29,040	\$ 13,200	\$ -	\$ 42,240
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	\$ 20,250	\$ 10,125	\$ 1,125	\$ 31,500
TOTAL - GROUND GRID							\$ 62,882	\$ 45,524	\$ 10,639	\$ 119,045

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8 - Existing Ruland 138 kV_ Upgrade & Interconnection							\$ 2,977,856	\$ 1,305,534	\$ 701,473	\$ 4,984,863
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		70,245.26	30,105.11	\$ -	\$ 70,245	\$ 30,105	\$ 100,350
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		199,394.54		\$ -	\$ 199,395	\$ -	\$ 199,395
9.4	Utility PM and Project Oversight	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.5	Site Accommodation, Facilities, Storage	1.0	LS	49,848.63			\$ 49,849	\$ -	\$ -	\$ 49,849
	Engineering									
9.6	Design Engineering	1.00	LS		398,789.08		\$ -	\$ 398,789	\$ -	\$ 398,789
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		34,894.04		\$ -	\$ 34,894	\$ -	\$ 34,894
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		186,932.38		\$ -	\$ 186,932	\$ -	\$ 186,932
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		14,954.59		\$ -	\$ 14,955	\$ -	\$ 14,955
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			51,052.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	1,531.56	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 186,000	\$ -	\$ -	\$ 186,000	\$ 186,000
9.20	Sales Tax on Materials	8.80%	LS	2,977,855.99			\$ 262,051	\$ -	\$ -	\$ 262,051
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,984.86		\$ -	\$ 4,985	\$ -	\$ 4,985
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 311,900	\$ 1,073,391	\$ 225,205	\$ 1,610,496

Propel NY - TO52 AS6

9 -Existing Shore Road 138 kV Interconnection

Total: \$ 11,923,278

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
9 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 581,223	\$ 386,312	\$ 254,245	\$ 1,221,780
3. SUBSTATION STRUCTURES	\$ 239,991	\$ 328,920	\$ 214,495	\$ 783,407
4. MAJOR EQUIPTMENT	\$ 2,326,452	\$ 217,004	\$ 93,002	\$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE	\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
6. CONDUIT & CABLE TRENCH	\$ 348,046	\$ 218,596	\$ 97,101	\$ 663,742
7. GROUND GRID	\$ 27,450	\$ 18,156	\$ 3,495	\$ 49,101
8. CONTROL ENCLOSURE	\$ 343,281	\$ 352,625	\$ 120,656	\$ 816,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 419,013	\$ 1,351,818	\$ 255,389	\$ 2,026,220
SUBTOTAL (Costs):	\$ 4,453,917	\$ 2,918,984	\$ 1,047,493	\$ 8,420,394
CONTRACTOR MARK-UP (OH&P)	\$ 801,705	\$ 525,417	\$ 188,549	\$ 1,515,671
SUBTOTAL:	\$ 5,255,622	\$ 3,444,401	\$ 1,236,042	\$ 9,936,065
CONTINGENCY ON ENTIRE PROJECT	\$ 1,051,124	\$ 688,880	\$ 247,208	\$ 1,987,213
TOTAL:	\$ 6,306,746	\$ 4,133,281	\$ 1,483,251	\$ 11,923,278

Description of Work: Interconnection Facilities to the existing LIPA Shore Road Substation, located in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. Shore Road Substation is an existing 138 kV AIS substation with a main-tie main configuration. The Solution includes installing two (2) additional circuit breakers to create a six (6) position ring bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 -Existing Shore Road 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7" Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	18	CY	703.89	804.44	502.78	\$ 12,514	\$ 14,301	\$ 8,938	\$ 35,753
2.24	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.25	138kV, Bus support-1 Ph, low	77	CY	703.89	804.44	502.78	\$ 54,298	\$ 62,055	\$ 38,784	\$ 155,136
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	16	EA	18,000.00	3,200.00	2,800.00	\$ 288,000	\$ 51,200	\$ 44,800	\$ 384,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 581,223	\$ 386,312	\$ 254,245	\$ 1,221,780
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.16	138kV, Bus support-1 Ph, low	19	EA	2,782.00	1,919.84	1,279.89	\$ 52,858	\$ 36,477	\$ 24,318	\$ 113,653
3.17	138kV, Disconnect Switch	3	EA	5,694.00	3,928.86	2,619.24	\$ 17,082	\$ 11,787	\$ 7,858	\$ 36,726
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	957	LF	25.00	184.94	123.29	\$ 23,925	\$ 176,986	\$ 117,990	\$ 318,901
3.24	AL. Bus fittings	1	LS	28,710.00	28,710.00	14,355.00	\$ 28,710	\$ 28,710	\$ 14,355	\$ 71,775
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 239,991	\$ 328,920	\$ 214,495	\$ 783,407
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	4	EA	510,000.00	13,559.00	5,811.00	\$ 2,040,000	\$ 54,236	\$ 23,244	\$ 2,117,480
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	12	EA	10,000.00	7,970.08	3,415.75	\$ 120,000	\$ 95,641	\$ 40,989	\$ 256,630
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 2,326,452	\$ 217,004	\$ 93,002	\$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	31,800	LF	5.30	1.43	0.29	\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,450	LF	11.15	10.80	5.40	\$ 71,918	\$ 69,660	\$ 34,830	\$ 176,408
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	450	LF	266.50	53.04	13.26	\$ 119,925	\$ 23,868	\$ 5,967	\$ 149,760
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	225	LF	81.00	107.00	57.00	\$ 18,225	\$ 24,075	\$ 12,825	\$ 55,125
6.9	138kV UG- Cable	675	LF	156.00	94.00	62.00	\$ 105,300	\$ 63,450	\$ 41,850	\$ 210,600
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	225	LF	7.40	3.33	2.22	\$ 1,664	\$ 749	\$ 500	\$ 2,913
6.12	Ground Continuity Conductor	225	LF	13.04	7.53	5.02	\$ 2,934	\$ 1,694	\$ 1,129	\$ 5,756
TOTAL - CONDUIT & CABLE TRENCH							\$ 348,046	\$ 218,596	\$ 97,101	\$ 663,742
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,224	LF	2.09	3.42	1.46	\$ 4,650	\$ 7,596	\$ 3,255	\$ 15,501
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID		-					\$ 27,450	\$ 18,156	\$ 3,495	\$ 49,101
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.8	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 343,281	\$ 352,625	\$ 120,656	\$ 816,562
9 -Existing Shore Road 138 kV_ Interconnection							\$ 4,034,903	\$ 1,567,166	\$ 792,104	\$ 6,394,174
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		82,574.45	35,389.05	\$ -	\$ 82,574	\$ 35,389	\$ 117,964
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		255,766.94		\$ -	\$ 255,767	\$ -	\$ 255,767
9.4	Utility PM and Project Oversight	1.0	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.5	Site Accommodation, Facilities, Storage	1.0	LS	63,941.74			\$ 63,942	\$ -	\$ -	\$ 63,942
	Engineering									
9.6	Design Engineering	1.00	LS		511,533.89		\$ -	\$ 511,534	\$ -	\$ 511,534
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		-		\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		44,759.22		\$ -	\$ 44,759	\$ -	\$ 44,759
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		239,781.51		\$ -	\$ 239,782	\$ -	\$ 239,782
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		19,182.52		\$ -	\$ 19,183	\$ -	\$ 19,183
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			242,657.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	7,279.71	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 220,000	\$ -	\$ -	\$ 220,000	\$ 220,000
9.20	Sales Tax on Materials	8.80%	LS	4,034,903.48			\$ 355,072	\$ -	\$ -	\$ 355,072
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,394.17		\$ -	\$ 6,394	\$ -	\$ 6,394
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 419,013	\$ 1,351,818	\$ 255,389	\$ 2,026,220

Propel NY - TO52 AS6

10 - Existing Dunwoodie 345 kV Interconnection

Total: \$ 6,437,592

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
10 - Existing Dunwoodie 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 6,000	\$ 4,000	\$ 10,000.00
2. SUBSTATION FOUNDATIONS	\$ 65,518	\$ 74,877	\$ 46,798	\$ 187,193.19
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364.35
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410.00
7. GROUND GRID	\$ 7,144	\$ 4,651	\$ 868	\$ 12,662.59
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,624.92
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 227,120	\$ 331,384	\$ 127,224	\$ 685,728.42
Turnkey cost (HVDC, GIS)	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
Non-Turnkey cost	\$ 412,445	\$ 497,229	\$ 200,310	\$ 1,109,983
SUBTOTAL (Costs):	\$ 2,325,124	\$ 1,644,836	\$ 965,382	\$ 4,935,341
CONTRACTOR MARK-UP (OH&P):	\$ 189,001	\$ 158,358	\$ 81,960	\$ 429,319
SUBTOTAL:	\$ 2,514,124	\$ 1,803,194	\$ 1,047,342	\$ 5,364,660
CONTINGENCY ON ENTIRE PROJECT	\$ 502,825	\$ 360,639	\$ 209,468	\$ 1,072,932
TOTAL:	\$ 3,016,949	\$ 2,163,832	\$ 1,256,810	\$ 6,437,592

Description of Work: interconnection facilities to the existing ConEd Dunwoodie Substation, located in the City of Yonkers, Westchester County. The Dunwoodie Substation includes an existing 345 kV GIS six (6) breaker ring. It is proposed that an additional braker be added to the ring to allow for interconnection of the new underground line from the Eastern Queens substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10 - Existing Dunwoodie 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	0	LS	140,319.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 6,000	\$ 4,000	\$ 10,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	73	CY	703.89	804.44	502.78	\$ 51,440	\$ 58,788	\$ 36,743	\$ 146,971
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.23	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.41	Precast Arch. Wall foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.42	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.43	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 65,518	\$ 74,877	\$ 46,798	\$ 187,193
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	18	EA	4,810.00	2,886.00	1,924.00				\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch - 3Ph	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch-3 Ph	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.26	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end - 3 Ph	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	1	EA	1,912,679.00	1,147,607.40	765,071.60	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	547	LF	2.09	3.42	1.46	\$ 1,144	\$ 1,868	\$ 801	\$ 3,813
7.2	Caweld, DSA, 4/0 , T, CROSS	29	EA	165.00	75.00		\$ 4,785	\$ 2,175	\$ -	\$ 6,960
7.3	Ground Rod, 3/4" x 15'	9	EA	135.00	67.50	7.50	\$ 1,215	\$ 608	\$ 68	\$ 1,890
TOTAL - GROUND GRID							\$ 7,144	\$ 4,651	\$ 868	\$ 12,663
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10 - Existing Dunwoodie 345 kV_ Interconnection							\$ 2,098,003	\$ 1,313,452	\$ 838,158	\$ 4,249,613
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		8,362.58	3,583.96	\$ -	\$ 8,363	\$ 3,584	\$ 11,947
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		42,496.13		\$ -	\$ 42,496	\$ -	\$ 42,496
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		169,984.52		\$ -	\$ 169,985	\$ -	\$ 169,985
9.4	Utility PM and Project Oversight	1.0	LS		42,496.13		\$ -	\$ 42,496	\$ -	\$ 42,496
9.5	Site Accommodation, Facilities, Storage	1.0	LS	42,496.13			\$ 42,496	\$ -	\$ -	\$ 42,496
	Engineering									
9.6	Design Engineering	1.00	LS		33,940.40		\$ -	\$ 33,940	\$ -	\$ 33,940
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		2,969.79		\$ -	\$ 2,970	\$ -	\$ 2,970
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		15,909.56		\$ -	\$ 15,910	\$ -	\$ 15,910
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		4,242.55		\$ -	\$ 4,243	\$ -	\$ 4,243
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,272.77		\$ -	\$ 1,273	\$ -	\$ 1,273
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 120,000	\$ -	\$ -	\$ 120,000	\$ 120,000
9.20	Sales Tax on Materials	8.80%	LS	2,098,003.10			\$ 184,624	\$ -	\$ -	\$ 184,624
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,249.61		\$ -	\$ 4,250	\$ -	\$ 4,250
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 227,120	\$ 331,384	\$ 127,224	\$ 685,728

Propel NY - TO52 AS6

11 -Existing Holbrook 138 Kv Upgrade

Total: \$ 1,907,161

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
11 -Existing Holbrook 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 3,000	\$ 2,000	\$ 5,000.00
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938.22
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364.35
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410.00
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562.30
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220.07
SUBTOTAL (Costs):	\$ 830,227	\$ 415,860	\$ 100,777	\$ 1,346,865
CONTRACTOR MARK-UP (OH&P)	\$ 149,441	\$ 74,855	\$ 18,140	\$ 242,436
SUBTOTAL:	\$ 979,668	\$ 490,715	\$ 118,917	\$ 1,589,301
CONTINGENCY ON ENTIRE PROJECT	\$ 195,934	\$ 98,143	\$ 23,783	\$ 317,860
TOTAL:	\$ 1,175,602	\$ 588,858	\$ 142,701	\$ 1,907,161

Description of Work:The Applicants propose Upgrades to the Holbrook Substation, which is an existing LIPA 138 kV AIS substation, configured as an eight (8) position ring bus. The Holbrook Substation is located in the Hamlet of Holbrook in the Town of Brookhaven in Suffolk County.The 138 kV, 138-882 Line currently feeds two (2) 138 kV/69 kV transformers via an AIS disconnect before connecting into its bus section within the ring bus. The Solution involves replacing the existing switch #1322 with a new hybrid PASS GIS 138 kV breaker system with integrated disconnect and ground switches.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11 -Existing Holbrook 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
11 -Existing Holbrook 138 Kv_ Upgrade							\$ 753,760	\$ 202,826	\$ 57,059	\$ 1,013,645
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,095.98	3,898.28	\$ -	\$ 9,096	\$ 3,898	\$ 12,994
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		40,545.79		\$ -	\$ 40,546	\$ -	\$ 40,546
9.4	Utility PM and Project Oversight	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.5	Site Accommodation, Facilities, Storage	1.0	LS	10,136.45			\$ 10,136	\$ -	\$ -	\$ 10,136
	Engineering									
9.6	Design Engineering	1.00	LS		81,091.59		\$ -	\$ 81,092	\$ -	\$ 81,092
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		7,095.51		\$ -	\$ 7,096	\$ -	\$ 7,096
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		38,011.68		\$ -	\$ 38,012	\$ -	\$ 38,012
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,040.93		\$ -	\$ 3,041	\$ -	\$ 3,041
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 38,000	\$ -	\$ -	\$ 38,000	\$ 38,000
9.20	Sales Tax on Materials	8.80%	LS	753,759.78			\$ 66,331	\$ -	\$ -	\$ 66,331
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,013.64		\$ -	\$ 1,014	\$ -	\$ 1,014
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220

Propel NY - TO52 AS6

12 -Existing Newbridge 138 Kv Upgrade

Total: \$ 4,643,995

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
12 -Existing Newbridge 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS	\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867
SUBTOTAL (Costs):	\$ 2,420,697	\$ 677,764	\$ 181,196	\$ 3,279,658
CONTRACTOR MARK-UP (OH&P)	\$ 435,726	\$ 121,998	\$ 32,615	\$ 590,338
SUBTOTAL:	\$ 2,856,423	\$ 799,762	\$ 213,811	\$ 3,869,996
CONTINGENCY ON ENTIRE PROJECT	\$ 571,285	\$ 159,952	\$ 42,762	\$ 773,999
TOTAL:	\$ 3,427,707	\$ 959,714	\$ 256,574	\$ 4,643,995

Description of Work: Upgrades to the existing LIPA 138 kV Newbridge Substation, located in the Town of Hempstead, Nassau County. Newbridge Substation is an existing 138 kV AIS substation with a six (6) bay BAAH configuration and 138 kV/69 kV transformers connected to each main bus. The Solution includes the addition of a new breaker in series with the existing 138 kV CB -1460, providing an additional contingency to the 138 kV Lines 138-465 and 138-461

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 -Existing Newbridge 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	920,000.00	13,559.00	5,811.00	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
12 -Existing Newbridge 138 Kv_ Upgrade							\$ 2,202,270	\$ 177,052	\$ 83,468	\$ 2,462,790
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,118.21	3,907.81	\$ -	\$ 9,118	\$ 3,908	\$ 13,026
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		98,511.60		\$ -	\$ 98,512	\$ -	\$ 98,512
9.4	Utility PM and Project Oversight	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.5	Site Accommodation, Facilities, Storage	1.0	LS	24,627.90			\$ 24,628	\$ -	\$ -	\$ 24,628
	Engineering									
9.6	Design Engineering	1.00	LS		197,023.21		\$ -	\$ 197,023	\$ -	\$ 197,023
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		17,239.53		\$ -	\$ 17,240	\$ -	\$ 17,240
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		92,354.63		\$ -	\$ 92,355	\$ -	\$ 92,355
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		7,388.37		\$ -	\$ 7,388	\$ -	\$ 7,388
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 92,000	\$ -	\$ -	\$ 92,000	\$ 92,000
9.20	Sales Tax on Materials	8.80%	LS	2,202,269.72			\$ 193,800	\$ -	\$ -	\$ 193,800
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,462.79		\$ -	\$ 2,463	\$ -	\$ 2,463
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867

Propel NY - TO52 AS6

13 - Existing EGC 138 kV Upgrade

Total: \$ 15,248,572

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
13 - Existing EGC 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS	\$ 328,144	\$ 375,022	\$ 234,389	\$ 937,555
3. SUBSTATION STRUCTURES	\$ 223,280	\$ 224,937	\$ 181,778	\$ 629,995
4. MAJOR EQUIPMENT	\$ 640,578	\$ 179,553	\$ 75,237	\$ 895,368
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 2,348,736	\$ 1,714,967	\$ 935,346	\$ 4,999,048
7. GROUND GRID	\$ 34,744	\$ 24,669	\$ 5,580	\$ 64,992
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 417,913	\$ 1,785,595	\$ 369,314	\$ 2,572,822
SUBTOTAL (Costs):	\$ 4,235,571	\$ 4,567,860	\$ 1,965,335	\$ 10,768,765
CONTRACTOR MARK-UP (OH&P)	\$ 762,403	\$ 822,215	\$ 353,760	\$ 1,938,378
SUBTOTAL:	\$ 4,997,973	\$ 5,390,075	\$ 2,319,095	\$ 12,707,143
CONTINGENCY ON ENTIRE PROJECT	\$ 999,595	\$ 1,078,015	\$ 463,819	\$ 2,541,429
TOTAL:	\$ 5,997,568	\$ 6,468,089	\$ 2,782,914	\$ 15,248,572

Description of Work: Upgrades to the existing LIPA East Garden City Substation, Hamlet of Uniondale, Town of Hempstead, Nassau County. The LIPA East Garden City Substation is an existing 138 kV AIS substation with a ten (10) position ring bus configuration.The Solution includes the installation of three (3) air core reactors with by-pass circuit, in series, to the 138 kV lines 138-462,138-465, and 138-463, respectively. Due to current site constraints, the new series reactors will be installed in the property adjacent to the existing station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 - Existing EGC 138 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000
1.3	New Access Road - 20'	2,051	SY	4.85	7.20	4.80	\$ 9,945	\$ 14,764	\$ 9,843	\$ 34,552
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	6,423	CY		9.00	6.00	\$ -	\$ 57,811	\$ 38,540	\$ 96,351
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	867	CY		21.00	9.00	\$ -	\$ 18,210	\$ 7,804	\$ 26,015
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,804	CY		2.40	1.60	\$ -	\$ 18,731	\$ 12,487	\$ 31,218
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	867	CY	25.00	2.40	1.60	\$ 21,679	\$ 2,081	\$ 1,387	\$ 25,148
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,217	LF	13.85	13.85	6.92	\$ 16,853	\$ 16,853	\$ 8,427	\$ 42,133
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	75,203.20	57,600.00	27,180.00	\$ 75,203	\$ 57,600	\$ 27,180	\$ 159,983
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	1,826	LF	2.41	3.16	0.72	\$ 4,399	\$ 5,769	\$ 1,314	\$ 11,482
1.18	Temporary fencing	1,217	LF	7.50	5.25	2.25	\$ 9,128	\$ 6,389	\$ 2,738	\$ 18,255
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	408	LF	156.00	117.00	117.00	\$ 63,648	\$ 47,736	\$ 47,736	\$ 159,120
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138kV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	\$ 116,803	\$ 133,489	\$ 83,430	\$ 333,722
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	\$ 102,429	\$ 117,062	\$ 73,164	\$ 292,655
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 328,144	\$ 375,022	\$ 234,389	\$ 937,555
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	\$ 85,800	\$ 51,480	\$ 68,640	\$ 205,920
3.23	AL. Bus Tubing, 5" SCH 80	500	LF	25.00	184.94	123.29	\$ 12,500	\$ 92,469	\$ 61,646	\$ 166,615
3.24	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 223,280	\$ 224,937	\$ 181,778	\$ 629,995

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	6	EA	37,700.00	11,875.50	5,089.50	\$ 226,200	\$ 71,253	\$ 30,537	\$ 327,990
4.23	138kV, Cable sealing end	18	EA	4,446.00	1,050.00	450.00	\$ 80,028	\$ 18,900	\$ 8,100	\$ 107,028
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	6	EA	46,833.00	6,500.00	2,500.00	\$ 280,998	\$ 39,000	\$ 15,000	\$ 334,998
4.26	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 640,578	\$ 179,553	\$ 75,237	\$ 895,368
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	225	LF	266.50	53.04	13.26	\$ 59,963	\$ 11,934	\$ 2,984	\$ 74,880
6.7	345kV UG- Conduit		LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	\$ 299,700	\$ 395,900	\$ 210,900	\$ 906,500
6.11	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	\$ 1,731,600	\$ 1,043,400	\$ 688,200	\$ 3,463,200
6.12	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.13	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	\$ 27,369	\$ 12,323	\$ 8,215	\$ 47,908
6.14	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	\$ 48,244	\$ 27,850	\$ 18,567	\$ 94,661
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,348,736	\$ 1,714,967	\$ 935,346	\$ 4,999,048
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,402	LF	2.09	3.42	1.46	\$ 7,114	\$ 11,619	\$ 4,980	\$ 23,712
7.2	Caweld, DSA, 4/0 , T, CROSS	102	EA	165.00	75.00		\$ 16,830	\$ 7,650	\$ -	\$ 24,480
7.3	Ground Rod, 3/4" x 15'	80	EA	135.00	67.50	7.50	\$ 10,800	\$ 5,400	\$ 600	\$ 16,800
TOTAL - GROUND GRID							\$ 34,744	\$ 24,669	\$ 5,580	\$ 64,992
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	356,309.62	249,416.73	106,892.89	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
13 - Existing EGC 138 kV_ Upgrade							\$ 3,817,657	\$ 2,782,265	\$ 1,596,021	\$ 8,195,943
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		153,240.00	65,674.29	\$ -	\$ 153,240	\$ 65,674	\$ 218,914
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		327,837.72		\$ -	\$ 327,838	\$ -	\$ 327,838
9.4	Utility PM and Project Oversight	1.0	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.5	Site Accommodation, Facilities, Storage	1.0	LS	81,959.43			\$ 81,959	\$ -	\$ -	\$ 81,959
	Engineering									
9.6	Design Engineering	1.00	LS		655,675.44		\$ -	\$ 655,675	\$ -	\$ 655,675
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		57,371.60		\$ -	\$ 57,372	\$ -	\$ 57,372
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		307,347.86		\$ -	\$ 307,348	\$ -	\$ 307,348
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		81,959.43		\$ -	\$ 81,959	\$ -	\$ 81,959
9.13	Environmental-special studies/investigation	1.00	LS	-	-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		24,587.83		\$ -	\$ 24,588	\$ -	\$ 24,588
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
9.20	Sales Tax on Materials	8.80%	LS	3,817,657.30			\$ 335,954	\$ -	\$ -	\$ 335,954
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		8,195.94		\$ -	\$ 8,196	\$ -	\$ 8,196
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 417,913	\$ 1,785,595	\$ 369,314	\$ 2,572,822

Propel NY - TO52 AS6

14 - Existing Rainey 345 kV Upgrade

Total: \$ 9,824,483

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
14 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS	\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879
SUBTOTAL (Costs):	\$ 4,800,582	\$ 1,658,463	\$ 479,150	\$ 6,938,195
CONTRACTOR MARK-UP (OH&P)	\$ 864,105	\$ 298,523	\$ 86,247	\$ 1,248,875
SUBTOTAL:	\$ 5,664,686	\$ 1,956,986	\$ 565,397	\$ 8,187,070
CONTINGENCY ON ENTIRE PROJECT	\$ 1,132,937	\$ 391,397	\$ 113,079	\$ 1,637,414
TOTAL:	\$ 6,797,623	\$ 2,348,384	\$ 678,476	\$ 9,824,483

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of two new breakers in series with the existing 345 kV CB -1E and CB-6E respectively, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 - Existing Rainey 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	90,000.00	60,000.00	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	40,089.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	6	EA	18,000.00	3,200.00	2,800.00	\$ 108,000	\$ 19,200	\$ 16,800	\$ 144,000
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	4	EA	980,000.00	57,239.00	24,531.00	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 - Existing Rainey 345 kV_ Upgrade							\$ 4,364,337	\$ 587,278	\$ 266,700	\$ 5,218,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		29,889.25	12,809.68	\$ -	\$ 29,889	\$ 12,810	\$ 42,699
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		208,732.61		\$ -	\$ 208,733	\$ -	\$ 208,733
9.4	Utility PM and Project Oversight	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.5	Site Accommodation, Facilities, Storage	1.0	LS	52,183.15			\$ 52,183	\$ -	\$ -	\$ 52,183
	Engineering									
9.6	Design Engineering	1.00	LS		417,465.22		\$ -	\$ 417,465	\$ -	\$ 417,465
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		36,528.21		\$ -	\$ 36,528	\$ -	\$ 36,528
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		195,686.82		\$ -	\$ 195,687	\$ -	\$ 195,687
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
0	Warranties / LOC's	1.00	LS		15,654.95		\$ -	\$ 15,655	\$ -	\$ 15,655
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 196,000	\$ -	\$ -	\$ 196,000	\$ 196,000
9.20	Sales Tax on Materials	8.80%	LS	4,364,336.72			\$ 384,062	\$ -	\$ -	\$ 384,062
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,218.32		\$ -	\$ 5,218	\$ -	\$ 5,218
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879

Propel NY - TO52 AS6

15 - Existing EGC 345 kV Upgrade

Total: \$ 187,697,651

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
15 - Existing EGC 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 682,076	\$ 927,906	\$ 609,012	\$ 2,218,993.80
2. SUBSTATION FOUNDATIONS	\$ 5,403,366	\$ 2,558,083	\$ 1,765,383	\$ 9,726,832.44
3. SUBSTATION STRUCTURES	\$ 770,190	\$ 442,375	\$ 258,283	\$ 1,470,847.65
4. MAJOR EQUIPMENT	\$ 40,434,941	\$ 11,217,779	\$ 7,420,025	\$ 59,072,745.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 341,689	\$ 92,396	\$ 18,479	\$ 452,564.25
6. CONDUIT & CABLE TRENCH	\$ 5,180,621	\$ 3,201,823	\$ 1,815,259	\$ 10,197,703.43
7. GROUND GRID	\$ 115,213	\$ 83,296	\$ 19,445	\$ 217,954.50
8. CONTROL ENCLOSURE	\$ 1,756,165	\$ 1,414,475	\$ 460,690	\$ 3,631,329.67
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,365,580	\$ 11,612,900	\$ 31,806,277	\$ 48,784,758.29
Turnkey cost (HVDC, GIS)	\$ 15,826,214	\$ 9,495,728	\$ 6,330,486	\$ 31,652,428
Non-Turnkey cost	\$ 44,223,627	\$ 22,055,306	\$ 37,842,368	\$ 104,121,301
SUBTOTAL (Costs):	\$ 60,049,841	\$ 31,551,035	\$ 44,172,853	\$ 135,773,729
CONTRACTOR MARK-UP (OH&P):	\$ 8,909,826	\$ 4,539,699	\$ 7,191,455	\$ 20,640,980
SUBTOTAL:	\$ 68,959,667	\$ 36,090,733	\$ 51,364,309	\$ 156,414,709
CONTINGENCY ON ENTIRE PROJECT	\$ 13,791,933	\$ 7,218,147	\$ 10,272,862	\$ 31,282,942
TOTAL:	\$ 82,751,600	\$ 43,308,880	\$ 61,637,171	\$ 187,697,651

Description of Work: Upgrade to the 345 kV East Garden City Substation, to be located at 555 Stewart Avenue, Hamlet of Uniondale, Town of Hempstead, Nassau County. The New 345 kV East Garden City Substation will be connected by six (6) new 345 kV underground transmission lines and the existing Y-49 Line. Also, it will serve the two (2) existing 345 kV/138 kV transformers located in the existing LIPA 138 kV East Garden City Substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
15 - Existing EGC 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,640	\$ 5,760	\$ 14,400
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	9,087	SY	4.85	7.20	4.80	\$ 44,071	\$ 65,425	\$ 43,617	\$ 153,112
1.4	Strip and Dispose Top Soil	1,291	CY		24.50	10.50	\$ -	\$ 31,621	\$ 13,552	\$ 45,173
1.5	Site Grading- Excavation for Substation Pad	17,446	CY		9.00	6.00	\$ -	\$ 157,018	\$ 104,679	\$ 261,697
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,355	CY		21.00	9.00	\$ -	\$ 49,460.67	\$ 21,197.43	\$ 70,658.10
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	21,197	CY		2.40	1.60	\$ -	\$ 50,874	\$ 33,916	\$ 84,790
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,355	CY	25.00	2.40	1.60	\$ 58,882	\$ 5,653	\$ 3,768	\$ 68,303
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	26,170	SY	-	6.00	4.00	\$ -	\$ 157,019	\$ 104,679	\$ 261,698
1.11	Site Surfacing - Aggregate 6" Thick	26,170	SY	8.25	4.50	3.00	\$ 215,901	\$ 117,764	\$ 78,509	\$ 412,174
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,298	LF	13.85	13.85	6.92	\$ 17,975	\$ 17,975	\$ 8,987	\$ 44,937
1.13	30' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	140,319.60	96,000.00	45,300.00	\$ 140,320	\$ 96,000	\$ 45,300	\$ 281,620
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,025	LF	2.41	3.16	0.72	\$ 4,880	\$ 6,399	\$ 1,458	\$ 12,737
1.18	Temporary fencing	1,350	LF	7.50	5.25	2.25	\$ 10,125	\$ 7,088	\$ 3,038	\$ 20,250
1.19	Substation entrance with asphalt	778	SY	19.50	26.00	19.50	\$ 15,167	\$ 20,222	\$ 15,167	\$ 50,556
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	961	LF	156.00	117.00	117.00	\$ 149,916	\$ 112,437	\$ 112,437	\$ 374,790

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 682,076	\$ 927,906	\$ 609,012	\$ 2,218,994
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	71	CY	703.89	804.44	502.78	\$ 50,145	\$ 57,308	\$ 35,818	\$ 143,271
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	32	CY	703.89	804.44	502.78	\$ 22,299	\$ 25,485	\$ 15,928	\$ 63,712
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	59	CY	703.89	804.44	502.78	\$ 41,811	\$ 47,784	\$ 29,865	\$ 119,459
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	37	CY	703.89	804.44	502.78	\$ 25,720	\$ 29,394	\$ 18,371	\$ 73,486
2.11	345kV, GIS support-3 Ph	251	CY	703.89	804.44	502.78	\$ 176,534	\$ 201,754	\$ 126,096	\$ 504,384
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	13	CY	703.89	804.44	502.78	\$ 9,291	\$ 10,619	\$ 6,637	\$ 26,547
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.18	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.21	345kV, Circuit Breaker (PASS)	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.22	345kV, Circuit Breaker (GIS), outdoor rated	280	CY	703.89	804.44	502.78	\$ 197,088	\$ 225,243	\$ 140,777	\$ 563,108
2.23	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	273	CY	703.89	804.44	502.78	\$ 192,161	\$ 219,612	\$ 137,258	\$ 549,030
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.34	Precast Firewall for transformer, PARs, reactors	2,850	SF	25.00	15.00	10.00	\$ 71,250	\$ 42,750	\$ 28,500	\$ 142,500
2.35	Precast Concrete Piles-12"X80'	206	EA	18,000.00	3,200.00	2,800.00	\$ 3,708,000	\$ 659,200	\$ 576,800	\$ 4,944,000
2.36	Local Control Cabinet foundation	10	CY	703.89	804.44	502.78	\$ 7,300	\$ 8,342	\$ 5,214	\$ 20,856
2.41	Precast Arch. Wall foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.42	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.43	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 5,403,366	\$ 2,558,083	\$ 1,765,383	\$ 9,726,832
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	4	EA	23,400.00	14,040.00	9,360.00	\$ 93,600	\$ 56,160	\$ 37,440	\$ 187,200
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.10	345kV, GIS support-3 Ph	19	EA	8,346.00	5,758.74	3,839.16	\$ 158,574	\$ 109,416	\$ 72,944	\$ 340,934
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.18	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80	99	LF	25.00	184.94	123.29	\$ 2,475	\$ 18,309	\$ 12,206	\$ 32,990
3.25	AL. Bus fittings	1	LS	2,970.00	2,970.00	1,485.00	\$ 2,970	\$ 2,970	\$ 1,485	\$ 7,425
3.26	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 770,190	\$ 442,375	\$ 258,283	\$ 1,470,848
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	9	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.6	345kV, CCVT	0	EA	16,900.00	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
	345kV, Shunt Reactor with oil containment-300MVAR	1	EA	3,633,158.00	3,520.00	880.00	\$ 3,633,158	\$ 3,520	\$ 880	\$ 3,637,558
4.10	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	2	EA		353,650.00	232,100.00	\$ -	\$ 707,300	\$ 464,200	\$ 1,171,500
4.13	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.12	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.14	345kV, Circuit Breaker (PASS)	1	EA	980,000.00	57,239.00	24,531.00	\$ 980,000	\$ 57,239	\$ 24,531	\$ 1,061,770
4.15	345kV, Circuit Breaker (GIS), outdoor rated	14	EA	1,130,443.86	678,266.31	452,177.54	\$ 15,826,214	\$ 9,495,728	\$ 6,330,486	\$ 31,652,428
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	3	EA	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 40,434,941	\$ 11,217,779	\$ 7,420,025	\$ 59,072,745
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	64,500	LF	5.30	1.43	0.29	\$ 341,689	\$ 92,396	\$ 18,479	\$ 452,564
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 341,689	\$ 92,396	\$ 18,479	\$ 452,564
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	10,200	LF	11.15	10.80	5.40	\$ 113,730	\$ 110,160	\$ 55,080	\$ 278,970
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	550	LF	266.50	53.04	13.26	\$ 146,575	\$ 29,172	\$ 7,293	\$ 183,040
6.7	345kV UG- Conduit	2,867	LF	230.08	133.40	55.96	\$ 659,556	\$ 382,417	\$ 160,416	\$ 1,202,389
6.8	345kV UG- Cable	8,600	LF	175.00	105.00	70.00	\$ 1,505,000	\$ 903,000	\$ 602,000	\$ 3,010,000
6.9	345kV UG- Termination	24	EA	27,144.00	9,048.00	6,032.00	\$ 651,456	\$ 217,152	\$ 144,768	\$ 1,013,376
6.10	138kV UG- Conduit	3,297	LF	81.00	107.00	57.00	\$ 267,030	\$ 352,743	\$ 187,910	\$ 807,683
6.11	138kV UG- Cable	9,890	LF	156.00	94.00	62.00	\$ 1,542,840	\$ 929,660	\$ 613,180	\$ 3,085,680
6.12	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.13	Fiber Optic Cable	6,163	LF	7.40	3.33	2.22	\$ 45,590	\$ 20,528	\$ 13,685	\$ 79,803
6.14	Ground Continuity Conductor	6,163	LF	13.04	7.53	5.02	\$ 80,364	\$ 46,391	\$ 30,928	\$ 157,683
TOTAL - CONDUIT & CABLE TRENCH							\$ 5,180,621	\$ 3,201,823	\$ 1,815,259	\$ 10,197,703
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	11,850	LF	2.09	3.42	1.46	\$ 24,778	\$ 40,471	\$ 17,345	\$ 82,595
7.2	Caweld, DSA, 4/0 , T, CROSS	319	EA	165.00	75.00		\$ 52,635	\$ 23,925	\$ -	\$ 76,560
7.3	Ground Rod, 3/4" x 15'	280	EA	135.00	67.50	7.50	\$ 37,800	\$ 18,900	\$ 2,100	\$ 58,800

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - GROUND GRID							\$ 115,213	\$ 83,296	\$ 19,445	\$ 217,955
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	427,571.55	299,300.08	128,271.46	\$ 427,572	\$ 299,300	\$ 128,271	\$ 855,143
8.2	Primary Line Relays (Pilot): SEL-411L	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.3	Backup Line Relays (Pilot): GE L90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.4	Primary Bay Control: SEL-451	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.5	Backup Bay Control: SEL-451	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.9	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator,	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 91,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,756,165	\$ 1,414,475	\$ 460,690	\$ 3,631,330
15 - Existing EGC 345 kV_ Upgrade							\$ 54,684,261	\$ 19,938,134	\$ 12,366,576	\$ 86,988,971
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		576,747.37	247,177.44	\$ -	\$ 576,747	\$ 247,177	\$ 823,925
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		553,365.43		\$ -	\$ 553,365	\$ -	\$ 553,365
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,213,461.71		\$ -	\$ 2,213,462	\$ -	\$ 2,213,462
9.4	Utility PM and Project Oversight	1.0	LS		553,365.43		\$ -	\$ 553,365	\$ -	\$ 553,365
9.5	Site Accommodation, Facilities, Storage	1.0	LS	553,365.43			\$ 553,365	\$ -	\$ -	\$ 553,365
	Engineering									
9.6	Design Engineering	1.00	LS		4,426,923.42		\$ -	\$ 4,426,923	\$ -	\$ 4,426,923
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		387,355.80		\$ -	\$ 387,356	\$ -	\$ 387,356
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,075,120.35		\$ -	\$ 2,075,120	\$ -	\$ 2,075,120
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		553,365.43		\$ -	\$ 553,365	\$ -	\$ 553,365
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		166,009.63		\$ -	\$ 166,010	\$ -	\$ 166,010
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			27,000,000.00	\$ -	\$ -	\$ 27,000,000	\$ 27,000,000
9.17	Legal Fees (Real estate)	1.00	LS		-	810,000.00	\$ -	\$ -	\$ 810,000	\$ 810,000
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,740,000	\$ -	\$ -	\$ 3,740,000	\$ 3,740,000
9.20	Sales Tax on Materials	8.80%	LS	54,684,260.57			\$ 4,812,215	\$ -	\$ -	\$ 4,812,215
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		86,988.97		\$ -	\$ 86,989	\$ -	\$ 86,989
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,365,580	\$ 11,612,900	\$ 31,806,277	\$ 48,784,758

Propel NY - TO52 AS6

16 -Existing Syosset 138 kV Interconnection

Total: \$ 23,416,431

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
16 -Existing Syosset 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES	\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPTMENT	\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID	\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015
SUBTOTAL (Costs):	\$ 12,068,481	\$ 3,441,070	\$ 1,027,476	\$ 16,537,028
CONTRACTOR MARK-UP (OH&P)	\$ 2,172,327	\$ 619,393	\$ 184,946	\$ 2,976,665
SUBTOTAL:	\$ 14,240,808	\$ 4,060,463	\$ 1,212,422	\$ 19,513,693
CONTINGENCY ON ENTIRE PROJECT	\$ 2,848,162	\$ 812,093	\$ 242,484	\$ 3,902,739
TOTAL:	\$ 17,088,969	\$ 4,872,555	\$ 1,454,907	\$ 23,416,431

Description of Work: Interconnection Facilities to the existing LIPA Syosset Substation, located in the Hamlet of Syosset, Town of Oyster Bay, Nassau County. Syosset Substation is a 138 kV AIS substation with an eight (8) ring bus configuration. The Solution includes the installation of a new underground 138 kV line with a PAR in an existing spare line position.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16 -Existing Syosset 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
							\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
TOTAL - 345KV FOUNDATION										
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.20	138kV, Surge arrester	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	81	LF	25.00	184.94	123.29	\$ 2,025	\$ 14,980	\$ 9,987	\$ 26,992
3.26	AL. Bus fittings	1	LS	2,430.00	2,430.00	1,215.00	\$ 2,430	\$ 2,430	\$ 1,215	\$ 6,075

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,087,382.00	3,520.00	880.00	\$ 10,087,382	\$ 3,520	\$ 880	\$ 10,091,782
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.23	138kV, CCVT	3	EA	10,000.00	7,970.08	3,415.75	\$ 30,000	\$ 23,910	\$ 10,247	\$ 64,158
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	792	LF	2.09	3.42	1.46	\$ 1,656	\$ 2,705	\$ 1,159	\$ 5,520
7.2	Caweld, DSA, 4/0 , T, CROSS	41	EA	165.00	75.00		\$ 6,765	\$ 3,075	\$ -	\$ 9,840
7.3	Ground Rod, 3/4" x 15'	12	EA	135.00	67.50	7.50	\$ 1,620	\$ 810	\$ 90	\$ 2,520
TOTAL - GROUND GRID		-					\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (Pilot): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
16 -Existing Syosset 138 kV_ Interconnection							\$ 10,978,337	\$ 908,544	\$ 518,131	\$ 12,405,013
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		49,933.65	21,400.14	\$ -	\$ 49,934	\$ 21,400	\$ 71,334
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		496,200.52		\$ -	\$ 496,201	\$ -	\$ 496,201
9.4	Utility PM and Project Oversight	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.5	Site Accommodation, Facilities, Storage	1.0	LS	124,050.13			\$ 124,050	\$ -	\$ -	\$ 124,050
	Engineering									
9.6	Design Engineering	1.00	LS		992,401.04		\$ -	\$ 992,401	\$ -	\$ 992,401
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		86,835.09		\$ -	\$ 86,835	\$ -	\$ 86,835
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		465,187.99		\$ -	\$ 465,188	\$ -	\$ 465,188
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		37,215.04		\$ -	\$ 37,215	\$ -	\$ 37,215
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			18,296.00	\$ -	\$ -	\$ 18,296	\$ 18,296
9.17	Legal Fees (Real estate)	1.00	LS		-	548.88	\$ -	\$ -	\$ 549	\$ 549
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 460,000	\$ -	\$ -	\$ 460,000	\$ 460,000
9.20	Sales Tax on Materials	8.80%	LS	10,978,337.32			\$ 966,094	\$ -	\$ -	\$ 966,094
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,405.01		\$ -	\$ 12,405	\$ -	\$ 12,405
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015

NYTrascCo - TO51 AS5

17 -Other Substation Upgrades

Total: \$ 647,945

NYTrascCo - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
17 -Other Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 18,427	\$ 82,412	\$ 15,499	\$ 116,339
SUBTOTAL (Costs):	\$ 189,052	\$ 218,912	\$ 49,624	\$ 457,589
CONTRACTOR MARK-UP (OH&P)	\$ 34,029	\$ 39,404	\$ 8,932	\$ 82,366
SUBTOTAL:	\$ 223,082	\$ 258,316	\$ 58,557	\$ 539,954
CONTINGENCY ON ENTIRE PROJECT	\$ 44,616	\$ 51,663	\$ 11,711	\$ 107,991
TOTAL:	\$ 267,698	\$ 309,979	\$ 70,268	\$ 647,945

Description of Work: Control protection replay panel upgrades at Valley Stream and Oakwood 138kV stations

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
17 -Other Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA							
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	AL. Bus fittings		LS	14,310.00	14,310.00	7,155.00	\$ -	\$ -	\$ -	\$ -
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	4,446.00	1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	0	LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
17 -Other Substation Upgrades							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		5,971.87	2,559.37	\$ -	\$ 5,972	\$ 2,559	\$ 8,531
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,412.50		\$ -	\$ 3,412	\$ -	\$ 3,412
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		13,649.99		\$ -	\$ 13,650	\$ -	\$ 13,650
9.4	Utility PM and Project Oversight	1.0	LS		3,412.50		\$ -	\$ 3,412	\$ -	\$ 3,412
9.5	Site Accommodation, Facilities, Storage	1.0	LS	3,412.50			\$ 3,412	\$ -	\$ -	\$ 3,412
	Engineering									
9.6	Design Engineering	1.00	LS		54,599.97		\$ -	\$ 54,600	\$ -	\$ 54,600
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		2,388.75		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	-	LS		12,796.87		\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		3,412.50		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,023.75		\$ -	\$ 1,024	\$ -	\$ 1,024
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 12,940	\$ -	\$ -	\$ 12,940	\$ 12,940
9.20	Sales Tax on Materials	8.80%	LS	170,624.92			\$ 15,015	\$ -	\$ -	\$ 15,015
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		341.25		\$ -	\$ 341	\$ -	\$ 341
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 18,427	\$ 82,412	\$ 15,499	\$ 116,339

Propel NY - TO52 AS6

AS 6.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit

Total: \$ 178,777,122

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS 6.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,185,984	\$ 10,763,750	\$ 4,301,834	\$ 17,251,568
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 12,723,086	\$ 12,194,981	\$ 7,877,550	\$ 32,795,618
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,508,207	\$ 15,377,038	\$ 9,804,979	\$ 50,690,224
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,596,428	\$ 15,849,300	\$ 5,071,891	\$ 25,517,620
SUBTOTAL (Costs):	\$ 45,013,705	\$ 54,185,070	\$ 27,056,254	\$ 126,255,030
CONTRACTOR MARK-UP (OH&P)	\$ 8,102,467	\$ 9,753,313	\$ 4,870,126	\$ 22,725,905
SUBTOTAL:	\$ 53,116,172	\$ 63,938,383	\$ 31,926,380	\$ 148,980,935
CONTINGENCY ON ENTIRE PROJECT	\$ 10,623,234	\$ 12,787,677	\$ 6,385,276	\$ 29,796,187
TOTAL:	\$ 63,739,406	\$ 76,726,059	\$ 38,311,656	\$ 178,777,122

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.
Barrett to EGC section is 8.76 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 6.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.76	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 6,132,000	\$ 2,628,000	\$ 8,760,000
1.3	Flaggers	280	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 448,000	\$ 1,344,000	\$ 448,000	\$ 2,240,000
1.4	K Rail / Lane Control / Metal Plates	46,253	LF	\$ 30	\$ 18	\$ 12	\$ 1,387,584	\$ 832,550	\$ 555,034	\$ 2,775,168
1.5	Police Support	11,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,344,000	\$ 302,400	\$ 1,646,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.76	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 350,400	\$ 1,051,200	\$ 350,400	\$ 1,752,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,185,984	\$ 10,763,750	\$ 4,301,834	\$ 17,251,568
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.76	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,224,648	\$ 816,432	\$ 2,041,080
2.2	Formwork in Trench	358,646	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 717,293	\$ 537,970	\$ 179,323	\$ 1,434,586
2.3	Trench Excavation	30,950	CY		\$ 17.5	\$ 7.5	\$ -	\$ 541,622	\$ 232,124	\$ 773,746
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,934	SF	\$ 50	\$ 25	\$ 14	\$ 96,718	\$ 47,392	\$ 27,081	\$ 171,191
2.5	Supply & Install Thermal Backfill	17,086	CY	\$ 350	\$ 245	\$ 105	\$ 5,979,931	\$ 4,185,951	\$ 1,793,979	\$ 11,959,861
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,904	CY	\$ 200	\$ 125	\$ 50	\$ 1,380,789	\$ 862,993	\$ 345,197	\$ 2,588,979
2.9	Conduit 8" HDPE	138,758	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 2,850,098	\$ 786,760	\$ 337,183	\$ 3,974,041
2.10	Conduit 4" HDPE	46,253	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 248,378	\$ 194,262	\$ 83,255	\$ 525,894
2.11	Conduit 2" HDPE	46,253	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 88,343	\$ 145,696	\$ 62,441	\$ 296,480
2.12	Warning Tape	46,253	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,938	\$ 11,563	\$ 4,625	\$ 23,126
2.13	Trench Box Shoring (Vault)	31	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 560,452	\$ 840,678	\$ 1,401,130
2.14	Splice Vault Excavation	10,075	CY		\$ 17.5	\$ 7.5	\$ -	\$ 176,313	\$ 75,563	\$ 251,875
2.15	Splice Vault Supply & Installation	31	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,085,000	\$ 511,500	\$ 1,193,500	\$ 2,790,000
2.16	Splice Vault Backfill	3,023	CY		\$ 14.0	\$ 6.0	\$ -	\$ 42,315	\$ 18,135	\$ 60,450
2.17	Jack and Bore along Route	104	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 83,200	\$ 166,400	\$ 166,400	\$ 416,000
2.18	HDD along Route	233	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 186,400	\$ 372,800	\$ 372,800	\$ 932,000
2.19	Air Test Ducts	231,264	LF			\$ 0.25	\$ -	\$ -	\$ 57,816	\$ 57,816
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	69	EA		\$ 400	\$ 1,200	\$ -	\$ 27,616	\$ 82,847	\$ 110,463
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	69	EA		\$ 10	\$ 15	\$ -	\$ 690	\$ 1,036	\$ 1,726
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	171	EA		\$ 400	\$ 1,200	\$ -	\$ 68,342	\$ 205,026	\$ 273,368
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 478,296	\$ 318,864	\$ -	\$ 478,296	\$ 318,864	\$ 797,160
2.26	Excess Materials Disposal to Certified Backfill	49,403	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,210,375	\$ 518,732	\$ 1,729,107
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	31	EA			\$ 4,000	\$ -	\$ -	\$ 124,000	\$ 124,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,025	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,025	\$ 20,512	\$ 61,537
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 12,723,086	\$ 12,194,981	\$ 7,877,550	\$ 32,795,618
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	145,696	FT	\$ 154	\$ 92	\$ 62	\$ 22,437,233	\$ 13,462,340	\$ 8,974,893	\$ 44,874,467
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	93	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,090,146	\$ 763,102	\$ 218,029	\$ 2,071,277
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	31	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 821,514	\$ 575,060	\$ 246,454	\$ 1,643,028
3.11	Fiber Optic Cable	48,565	FT	\$ 7	\$ 3	\$ 2	\$ 359,239	\$ 161,752	\$ 107,835	\$ 628,825
3.12	Ground Continuity Conductor	48,565	FT	\$ 13	\$ 8	\$ 5	\$ 633,245	\$ 365,552	\$ 243,701	\$ 1,242,498
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,508,207	\$ 15,377,038	\$ 9,804,979	\$ 50,690,224
AS 6.1 Barrett to East Garden City 345kV Onshore UG Cables -single circuit							\$ 40,417,277	\$ 38,335,770	\$ 21,984,363	\$ 100,737,410
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,809,604	\$ 1,206,403	\$ -	\$ 1,809,604	\$ 1,206,403	\$ 3,016,007
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,007,374.10		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,029,496.40		\$ -	\$ 4,029,496	\$ -	\$ 4,029,496
4.4	Utility PM and Project Oversight	1.0	LS		1,007,374.10		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,007,374.10			\$ 1,007,374	\$ -	\$ -	\$ 1,007,374
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,036,871	\$ -	\$ -	\$ 5,036,871	\$ -	\$ 5,036,871
4.7	LiDAR /GPR	1.0	LS		\$ 181,327	\$ 120,885	\$ -	\$ 181,327	\$ 120,885	\$ 302,212
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 423,097		\$ -	\$ 423,097	\$ -	\$ 423,097
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		1,007,374		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 302,212		\$ -	\$ 302,212	\$ -	\$ 302,212
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Legal Fees (Real estate)	1	LS		-	\$ 63,579	\$ -	\$ -	\$ 63,579	\$ 63,579
4.16	Legal Fees (Real estate)	1	LS			1,907.37	\$ -	\$ -	\$ 1,907	\$ 1,907
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	2	Crossing			\$ 1,000	\$ -	\$ -	\$ 2,000	\$ 2,000
4.19	Bonds	1	LS			\$ 3,560,000	\$ -	\$ -	\$ 3,560,000	\$ 3,560,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 40,417,276.74			\$ 3,589,054	\$ -	\$ -	\$ 3,589,054
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 100,737	\$ -	\$ -	\$ 100,737	\$ 100,737
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,596,428	\$ 15,849,300	\$ 5,071,891	\$ 25,517,620

Propel NY - TO52 AS6

AS6.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit

Total: \$ 546,334,828

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163
SUBTOTAL (Costs):	\$ 128,284,803	\$ 166,136,233	\$ 91,408,645	\$ 385,829,681
CONTRACTOR MARK-UP (OH&P)	\$ 23,091,265	\$ 29,904,522	\$ 16,453,556	\$ 69,449,343
SUBTOTAL:	\$ 151,376,067	\$ 196,040,755	\$ 107,862,202	\$ 455,279,024
CONTINGENCY ON ENTIRE PROJECT	\$ 30,275,213	\$ 39,208,151	\$ 21,572,440	\$ 91,055,805
TOTAL:	\$ 181,651,281	\$ 235,248,906	\$ 129,434,642	\$ 546,334,828

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.
Barrett to EGC section is 23.46 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	23.46	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 16,422,000	\$ 7,038,000	\$ 23,460,000
1.3	Flaggers	720	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,152,000	\$ 3,456,000	\$ 1,152,000	\$ 5,760,000
1.4	K Rail / Lane Control / Metal Plates	123,869	LF	\$ 30	\$ 18	\$ 12	\$ 3,716,064	\$ 2,229,638	\$ 1,486,426	\$ 7,432,128
1.5	Police Support	28,800.0	HR		\$ 120	\$ 27	\$ -	\$ 3,456,000	\$ 777,600	\$ 4,233,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	23.46	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 938,400	\$ 2,815,200	\$ 938,400	\$ 4,692,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	23.46	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 3,279,708	\$ 2,186,472	\$ 5,466,180
2.2	Formwork in Trench	878,054	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,756,109	\$ 1,317,082	\$ 439,027	\$ 3,512,218
2.3	Trench Excavation	75,773	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,326,025	\$ 568,296	\$ 1,894,321
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,736	SF	\$ 50	\$ 25	\$ 14	\$ 236,790	\$ 116,027	\$ 66,301	\$ 419,119
2.5	Supply & Install Thermal Backfill	41,830	CY	\$ 350	\$ 245	\$ 105	\$ 14,640,338	\$ 10,248,236	\$ 4,392,101	\$ 29,280,675
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,903	CY	\$ 200	\$ 125	\$ 50	\$ 3,380,509	\$ 2,112,818	\$ 845,127	\$ 6,338,455
2.9	Conduit 8" HDPE	371,606	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 7,632,795	\$ 2,107,008	\$ 903,004	\$ 10,642,807
2.10	Conduit 4" HDPE	123,869	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 665,175	\$ 520,249	\$ 222,964	\$ 1,408,388
2.11	Conduit 2" HDPE	123,869	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 236,589	\$ 390,187	\$ 167,223	\$ 793,999
2.12	Warning Tape	123,869	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,580	\$ 30,967	\$ 12,387	\$ 61,934
2.13	Trench Box Shoring (Vault)	80	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,446,328	\$ 2,169,492	\$ 3,615,819
2.14	Splice Vault Excavation	26,000	CY		\$ 17.5	\$ 7.5	\$ -	\$ 455,000	\$ 195,000	\$ 650,000
2.15	Splice Vault Supply & Installation	80	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,800,000	\$ 1,320,000	\$ 3,080,000	\$ 7,200,000
2.16	Splice Vault Backfill	7,800	CY		\$ 14.0	\$ 6.0	\$ -	\$ 109,200	\$ 46,800	\$ 156,000
2.17	Jack and Bore along Route	240	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 192,000	\$ 384,000	\$ 384,000	\$ 960,000
2.18	HDD along Route	11,072	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 8,857,600	\$ 17,715,200	\$ 17,715,200	\$ 44,288,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	619,344	LF			\$ 0.25	\$ -	\$ -	\$ 154,836	\$ 154,836
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	45,810	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 641,340	\$ 641,340	\$ 320,670	\$ 1,603,351
2.21	PVMT, AGGREGATE, 10" , BASE COURSE	12,725	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 284,786	\$ 299,025	\$ 128,154	\$ 711,964
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	169	EA		\$ 400	\$ 1,200	\$ -	\$ 67,610	\$ 202,831	\$ 270,441
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	169	EA		\$ 10	\$ 15	\$ -	\$ 1,690	\$ 2,535	\$ 4,226
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	418	EA		\$ 400	\$ 1,200	\$ -	\$ 167,318	\$ 501,954	\$ 669,273
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,280,916	\$ 853,944	\$ -	\$ 1,280,916	\$ 853,944	\$ 2,134,860
2.26	Excess Materials Disposal to Certified Backfill	122,165	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,993,035	\$ 1,282,729	\$ 4,275,764
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	80	EA			\$ 4,000	\$ -	\$ -	\$ 320,000	\$ 320,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	101,773	CF		\$ 1.0	\$ 0.5	\$ -	\$ 101,773	\$ 50,886	\$ 152,659
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	390,187	FT	\$ 154	\$ 92	\$ 62	\$ 60,088,755	\$ 36,053,253	\$ 24,035,502	\$ 120,177,510
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	240	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,813,280	\$ 1,969,296	\$ 562,656	\$ 5,345,232
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	80	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,120,036	\$ 1,484,025	\$ 636,011	\$ 4,240,072
3.11	Fiber Optic Cable	130,062	FT	\$ 7	\$ 3	\$ 2	\$ 962,070	\$ 433,185	\$ 288,790	\$ 1,684,046
3.12	Ground Continuity Conductor	130,062	FT	\$ 13	\$ 8	\$ 5	\$ 1,695,882	\$ 978,978	\$ 652,652	\$ 3,327,512
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
AS6.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit							\$ 114,995,929	\$ 117,897,551	\$ 74,830,037	\$ 307,723,518
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,781,828	\$ 3,854,552	\$ -	\$ 5,781,828	\$ 3,854,552	\$ 9,636,379
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		12,308,940.71		\$ -	\$ 12,308,941	\$ -	\$ 12,308,941
4.4	Utility PM and Project Oversight	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.5	Site Accommodation, Facilities, Storage	1.0	LS	3,077,235.18			\$ 3,077,235	\$ -	\$ -	\$ 3,077,235
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 15,386,176	\$ -	\$ -	\$ 15,386,176	\$ -	\$ 15,386,176
4.7	LiDAR /GPR	1.0	LS		\$ 553,902	\$ 369,268	\$ -	\$ 553,902	\$ 369,268	\$ 923,171
4.8	Geotech	24.0	Location		2,730.00	1,820.00	\$ -	\$ 65,520	\$ 43,680	\$ 109,200
4.9	Surveying/Staking	1	LS		\$ 1,292,439		\$ -	\$ 1,292,439	\$ -	\$ 1,292,439
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,077,235		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.12	Environmental-special studies/investigation	1	LS		\$ 175,000		\$ -	\$ 175,000	\$ -	\$ 175,000
4.13	Warranties / LOC's	1	LS		\$ 923,171		\$ -	\$ 923,171	\$ -	\$ 923,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 1,050,859	\$ -	\$ -	\$ 1,050,859	\$ 1,050,859
4.16	Legal Fees (Real estate)	1.00	LS		-	31,525.77	\$ -	\$ -	\$ 31,526	\$ 31,526
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 10,920,000	\$ -	\$ -	\$ 10,920,000	\$ 10,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 114,995,929.25			\$ 10,211,639	\$ -	\$ -	\$ 10,211,639
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 307,724	\$ -	\$ -	\$ 307,724	\$ 307,724
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163

Propel NY - TO52 AS6

AS6.3 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 211,488,737

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.3 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945
SUBTOTAL (Costs):	\$ 53,010,451	\$ 64,488,496	\$ 31,857,505	\$ 149,356,453
CONTRACTOR MARK-UP (OH&P)	\$ 9,541,881	\$ 11,607,929	\$ 5,734,351	\$ 26,884,162
SUBTOTAL:	\$ 62,552,333	\$ 76,096,426	\$ 37,591,856	\$ 176,240,614
CONTINGENCY ON ENTIRE PROJECT	\$ 12,510,467	\$ 15,219,285	\$ 7,518,371	\$ 35,248,123
TOTAL:	\$ 75,062,799	\$ 91,315,711	\$ 45,110,228	\$ 211,488,737

Description of Work: The proposed 345 kV and 138 kV electric underground transmission lines extending from the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County to the Shore Road Substation in the Glenwood Landing Hamlet in Nassau County. The proposed route will be approximately 10.3 miles, utilizing 4000 kcmil XLPE cable for the route.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.3 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,175,000	\$ 3,075,000	\$ 10,250,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	54,120	LF	\$ 30	\$ 18	\$ 12	\$ 1,623,600	\$ 974,160	\$ 649,440	\$ 3,247,200
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 410,000	\$ 1,230,000	\$ 410,000	\$ 2,050,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,432,950	\$ 955,300	\$ 2,388,250
2.2	Formwork in Trench	419,712	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 839,424	\$ 629,568	\$ 209,856	\$ 1,678,848
2.3	Trench Excavation	36,220	CY		\$ 17.5	\$ 7.5	\$ -	\$ 633,843	\$ 271,647	\$ 905,490
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,264	SF	\$ 50	\$ 25	\$ 14	\$ 113,186	\$ 55,461	\$ 31,692	\$ 200,340
2.5	Supply & Install Thermal Backfill	19,995	CY	\$ 350	\$ 245	\$ 105	\$ 6,998,115	\$ 4,898,680	\$ 2,099,434	\$ 13,996,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,079	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,615,891	\$ 1,009,932	\$ 403,973	\$ 3,029,796
2.9	Conduit 8" HDPE	162,360	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 3,334,874	\$ 920,581	\$ 394,535	\$ 4,649,990
2.10	Conduit 4" HDPE	54,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 290,624	\$ 227,304	\$ 97,416	\$ 615,344
2.11	Conduit 2" HDPE	54,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 103,369	\$ 170,478	\$ 73,062	\$ 346,909
2.12	Warning Tape	54,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,118	\$ 13,530	\$ 5,412	\$ 27,060
2.13	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.14	Splice Vault Excavation	11,375	CY		\$ 17.5	\$ 7.5	\$ -	\$ 199,063	\$ 85,313	\$ 284,375
2.15	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.16	Splice Vault Backfill	3,413	CY		\$ 14.0	\$ 6.0	\$ -	\$ 47,775	\$ 20,475	\$ 68,250
2.17	Jack and Bore along Route	113	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 90,400	\$ 180,800	\$ 180,800	\$ 452,000
2.18	HDD along Route	318	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 254,400	\$ 508,800	\$ 508,800	\$ 1,272,000
2.19	Air Test Ducts	270,600	LF			\$ 0.25	\$ -	\$ -	\$ 67,650	\$ 67,650
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,687	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 303,614	\$ 303,614	\$ 151,807	\$ 759,034

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,024	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 134,819	\$ 141,560	\$ 60,668	\$ 337,047
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	81	EA		\$ 400	\$ 1,200	\$ -	\$ 32,318	\$ 96,953	\$ 129,271
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	81	EA		\$ 10	\$ 15	\$ -	\$ 808	\$ 1,212	\$ 2,020
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	200	EA		\$ 400	\$ 1,200	\$ -	\$ 79,978	\$ 239,935	\$ 319,914
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 559,650	\$ 373,100	\$ -	\$ 559,650	\$ 373,100	\$ 932,750
2.26	Excess Materials Disposal to Certified Backfill	57,437	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,407,200	\$ 603,086	\$ 2,010,285
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	35	EA			\$ 4,000	\$ -	\$ -	\$ 140,000	\$ 140,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	47,595	CF		\$ 1.0	\$ 0.5	\$ -	\$ 47,595	\$ 23,797	\$ 71,392
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	170,478	FT	\$ 154	\$ 92	\$ 62	\$ 26,253,612	\$ 15,752,167	\$ 10,501,445	\$ 52,507,224
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	105	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,230,810	\$ 861,567	\$ 246,162	\$ 2,338,539
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	35	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 927,516	\$ 649,261	\$ 278,255	\$ 1,855,032
3.11	Fiber Optic Cable	56,826	FT	\$ 7	\$ 3	\$ 2	\$ 420,342	\$ 189,265	\$ 126,176	\$ 735,783
3.12	Ground Continuity Conductor	56,826	FT	\$ 13	\$ 8	\$ 5	\$ 740,954	\$ 427,729	\$ 285,153	\$ 1,453,836
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
AS6.3 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit							\$ 47,597,498	\$ 45,172,137	\$ 25,859,873	\$ 118,629,508
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,130,960	\$ 1,420,640	\$ -	\$ 2,130,960	\$ 1,420,640	\$ 3,551,600
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,745,180.33		\$ -	\$ 4,745,180	\$ -	\$ 4,745,180
4.4	Utility PM and Project Oversight	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,186,295.08			\$ 1,186,295	\$ -	\$ -	\$ 1,186,295
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,931,475	\$ -	\$ -	\$ 5,931,475	\$ -	\$ 5,931,475
4.7	LiDAR /GPR	1.0	LS		\$ 213,533	\$ 142,355	\$ -	\$ 213,533	\$ 142,355	\$ 355,889
4.8	Geotech	11.0	Location		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 830,407		\$ -	\$ 830,407	\$ -	\$ 830,407
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,186,295		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 355,889		\$ -	\$ 355,889	\$ -	\$ 355,889
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 72,803	\$ -	\$ -	\$ 72,803	\$ 72,803
4.16	Legal Fees (Real estate)	1.00	LS		-	2,184.09	\$ -	\$ -	\$ 2,184	\$ 2,184
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	100.00%	LS			\$ 4,220,000	\$ -	\$ -	\$ 4,220,000	\$ 4,220,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 47,597,498			\$ 4,226,658	\$ -	\$ -	\$ 4,226,658
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 118,630	\$ -	\$ -	\$ 118,630	\$ 118,630
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945

Propel NY - TO52 AS6

AS6.4 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 359,455,633

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.4 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552
SUBTOTAL (Costs):	\$ 91,556,197	\$ 107,706,768	\$ 54,589,882	\$ 253,852,848
CONTRACTOR MARK-UP (OH&P)	\$ 16,480,115	\$ 19,387,218	\$ 9,826,179	\$ 45,693,513
SUBTOTAL:	\$ 108,036,313	\$ 127,093,987	\$ 64,416,061	\$ 299,546,360
CONTINGENCY ON ENTIRE PROJECT	\$ 21,607,263	\$ 25,418,797	\$ 12,883,212	\$ 59,909,272
TOTAL:	\$ 129,643,575	\$ 152,512,784	\$ 77,299,273	\$ 359,455,633

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.4 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	17.83	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 12,481,000	\$ 5,349,000	\$ 17,830,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	94,142	LF	\$ 30	\$ 18	\$ 12	\$ 2,824,272	\$ 1,694,563	\$ 1,129,709	\$ 5,648,544
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	17.83	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 713,200	\$ 2,139,600	\$ 713,200	\$ 3,566,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	17.83	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,492,634	\$ 1,661,756	\$ 4,154,390
2.2	Formwork in Trench	734,083	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,468,166	\$ 1,101,125	\$ 367,042	\$ 2,936,333
2.3	Trench Excavation	63,349	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,108,602	\$ 475,115	\$ 1,583,717
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,959	SF	\$ 50	\$ 25	\$ 14	\$ 197,965	\$ 97,003	\$ 55,430	\$ 350,397
2.5	Supply & Install Thermal Backfill	34,971	CY	\$ 350	\$ 245	\$ 105	\$ 12,239,818	\$ 8,567,872	\$ 3,671,945	\$ 24,479,636
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,131	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,826,220	\$ 1,766,388	\$ 706,555	\$ 5,299,163
2.9	Conduit 8" HDPE	282,427	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,801,055	\$ 1,601,362	\$ 686,298	\$ 8,088,715
2.10	Conduit 4" HDPE	94,142	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 505,545	\$ 395,398	\$ 169,456	\$ 1,070,399
2.11	Conduit 2" HDPE	94,142	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 179,812	\$ 296,549	\$ 127,092	\$ 603,453
2.12	Warning Tape	94,142	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,121	\$ 23,536	\$ 9,414	\$ 47,071
2.13	Trench Box Shoring (Vault)	62	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,120,904	\$ 1,681,356	\$ 2,802,260
2.14	Splice Vault Excavation	20,150	CY		\$ 17.5	\$ 7.5	\$ -	\$ 352,625	\$ 151,125	\$ 503,750
2.15	Splice Vault Supply & Installation	62	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,170,000	\$ 1,023,000	\$ 2,387,000	\$ 5,580,000
2.16	Splice Vault Backfill	6,045	CY		\$ 14.0	\$ 6.0	\$ -	\$ 84,630	\$ 36,270	\$ 120,900
2.17	Jack and Bore along Route	212	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 169,600	\$ 339,200	\$ 339,200	\$ 848,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	470,712	LF			\$ 0.25	\$ -	\$ -	\$ 117,678	\$ 117,678
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	37,981	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 531,739	\$ 531,739	\$ 265,869	\$ 1,329,347
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,550	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 236,117	\$ 247,923	\$ 106,253	\$ 590,293
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	141	EA		\$ 400	\$ 1,200	\$ -	\$ 56,524	\$ 169,573	\$ 226,098
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	141	EA		\$ 10	\$ 15	\$ -	\$ 1,413	\$ 2,120	\$ 3,533
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	350	EA		\$ 400	\$ 1,200	\$ -	\$ 139,884	\$ 419,651	\$ 559,535
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 973,518	\$ 649,012	\$ -	\$ 973,518	\$ 649,012	\$ 1,622,530
2.26	Excess Materials Disposal to Certified Backfill	100,690	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,466,899	\$ 1,057,242	\$ 3,524,142
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	62	EA			\$ 4,000	\$ -	\$ -	\$ 248,000	\$ 248,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	83,499	CF		\$ 1.0	\$ 0.5	\$ -	\$ 83,499	\$ 41,749	\$ 125,248
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	296,549	FT	\$ 154	\$ 92	\$ 62	\$ 45,668,478	\$ 27,401,087	\$ 18,267,391	\$ 91,336,956
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	62	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,643,028	\$ 1,150,120	\$ 492,908	\$ 3,286,056
3.11	Fiber Optic Cable	98,850	FT	\$ 7	\$ 3	\$ 2	\$ 731,190	\$ 329,228	\$ 219,485	\$ 1,279,904
3.12	Ground Continuity Conductor	98,850	FT	\$ 13	\$ 8	\$ 5	\$ 1,288,899	\$ 744,040	\$ 496,027	\$ 2,528,966
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
AS6.4 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit							\$ 82,228,347	\$ 76,499,301	\$ 43,869,648	\$ 202,597,296
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,611,068	\$ 2,407,379	\$ -	\$ 3,611,068	\$ 2,407,379	\$ 6,018,447
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		8,103,891.84		\$ -	\$ 8,103,892	\$ -	\$ 8,103,892
4.4	Utility PM and Project Oversight	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,025,972.96			\$ 2,025,973	\$ -	\$ -	\$ 2,025,973
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,129,865	\$ -	\$ -	\$ 10,129,865	\$ -	\$ 10,129,865
4.7	LiDAR /GPR	1.0	LS		\$ 364,675	\$ 243,117	\$ -	\$ 364,675	\$ 243,117	\$ 607,792
4.8	Geotech	18.0	Location		2,730.00	1,820.00	\$ -	\$ 49,140	\$ 32,760	\$ 81,900
4.9	Surveying/Staking	1	LS		\$ 850,909		\$ -	\$ 850,909	\$ -	\$ 850,909
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,025,973		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.12	Environmental-special studies/investigation	1	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 607,792	\$ -	\$ -	\$ 607,792	\$ 607,792
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 45,232	\$ -	\$ -	\$ 45,232	\$ 45,232
4.16	Legal Fees (Real estate)	1.00	LS		-	1,356.96	\$ -	\$ -	\$ 1,357	\$ 1,357
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 7,180,000	\$ -	\$ -	\$ 7,180,000	\$ 7,180,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 82,228,347			\$ 7,301,877	\$ -	\$ -	\$ 7,301,877
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 202,597	\$ -	\$ -	\$ 202,597	\$ 202,597
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552

Propel NY - TO52 AS6

AS6.5a Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)

Total: \$ 466,224,722

AS6.5a Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.5a Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)				
1. SUBMARINE CABLE	\$ 83,811,284	\$ 105,456,021	\$ 71,430,310	\$ 260,697,615
2. TRANSITION STATION	\$ 1,111,500	\$ 1,104,004	\$ 1,062,536	\$ 3,278,040
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 10,112,962	\$ 39,600,811	\$ 15,565,320	\$ 65,279,093
SUBTOTAL (Costs):	\$ 95,035,745	\$ 146,160,836	\$ 88,058,167	\$ 329,254,747
CONTRACTOR MARK-UP (OH&P)	\$ 17,106,434	\$ 26,308,950	\$ 15,850,470	\$ 59,265,855
SUBTOTAL:	\$ 112,142,179	\$ 172,469,786	\$ 103,908,636	\$ 388,520,602
CONTINGENCY ON ENTIRE PROJECT	\$ 22,428,436	\$ 34,493,957	\$ 20,781,727	\$ 77,704,120
TOTAL:	\$ 134,570,615	\$ 206,963,743	\$ 124,690,364	\$ 466,224,722

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.5a Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA + Vessel Install	200,492	FT	\$ 375	\$ 400	\$ 250	\$ 75,184,560	\$ 80,196,864	\$ 50,123,040	\$ 205,504,464
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 10,147,637	\$ 6,765,092	\$ -	\$ 10,147,637	\$ 6,765,092	\$ 16,912,729
1.3	Submarine Cable Splicing if Required 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	24	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 669,858	\$ 893,144	\$ 669,858	\$ 2,232,859
1.5	Outdoor Termination	24	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 669,858	\$ 893,144	\$ 669,858	\$ 2,232,859
1.6	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.7	HDD along Route	4,062	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,499,840	\$ 12,999,680	\$ 12,999,680	\$ 32,499,200
1.8	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 33,891	\$ 22,594	\$ -	\$ 33,891	\$ 22,594	\$ 56,485
1.9	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
1.10	Trench Excavation	1,612	CY		\$ 17.5	\$ 7.5	\$ -	\$ 28,207	\$ 12,089	\$ 40,296
1.11	Supply & Install 6" Sand Bedding for direct bury conduits	101	SF	\$ 50	\$ 25	\$ 14	\$ 5,037	\$ 2,468	\$ 1,410	\$ 8,916
1.13	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
1.14	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
1.15	Native Backfill -direct bury conduits sys Trench	1,371	CY		\$ 14.0	\$ 6.0	\$ -	\$ 19,194	\$ 8,226	\$ 27,420
1.16	Conduit 15" HDPE	5,120	LF	\$ 150.0	\$ 45.0	\$ 30.0	\$ 768,000	\$ 230,400	\$ 153,600	\$ 1,152,000
1.17	Conduit 4" HDPE	2,560	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 13,747	\$ 10,752	\$ 4,608	\$ 29,107
1.18	Conduit 2" HDPE	0	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
1.19	Warning Tape	2,560	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 384	\$ 640	\$ 256	\$ 1,280
TOTAL - MARINE CABLE :							\$ 83,811,284	\$ 105,456,021	\$ 71,430,310	\$ 260,697,615
2. TRANSITION STATION										
2.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,094	\$ 14,063	\$ 35,156
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	2,600	LF	7.50	5.25	2.25	\$ 19,500	\$ 13,650	\$ 5,850	\$ 39,000
2.4	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.5	Splice Vault Excavation	3,186	CY		\$ 17.5	\$ 7.5	\$ -	\$ 55,751	\$ 23,893	\$ 79,644
2.6	Splice Vault Supply & Installation	8	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 560,000	\$ 180,000	\$ 420,000	\$ 1,160,000
2.7	Splice Vault Backfill	956	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,380	\$ 5,734	\$ 19,115
2.8	Air Test Ducts	7,680	LF			\$ 0.25	\$ -	\$ -	\$ 1,920	\$ 1,920
2.9	Restoration (incl. Paving)	38,000	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 532,000	\$ 532,000	\$ 266,000	\$ 1,330,000

AS6.5a Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)										
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill	3,212	CY		\$ 24.5	\$ 10.5	\$ -	\$ 78,698	\$ 33,728	\$ 112,426
2.15	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	4,798	CF		\$ 1.0	\$ 0.5	\$ -	\$ 4,798	\$ 2,399	\$ 7,196
2.20							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 1,111,500	\$ 1,104,004	\$ 1,062,536	\$ 3,278,040
AS6.5a Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)							\$ 84,922,784	\$ 106,560,025	\$ 72,492,846	\$ 263,975,655
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,639,756.55		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		10,559,026.20		\$ -	\$ 10,559,026	\$ -	\$ 10,559,026
3.4	Utility PM and Project Oversight	1.0	LS		2,639,756.55		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.5	Site Accommodation, Facilities, Storage	1.0	LS	2,639,756.55			\$ 2,639,757	\$ -	\$ -	\$ 2,639,757
	Engineering									
3.6	Design Engineering	1	LS		\$ 13,198,783		\$ -	\$ 13,198,783	\$ -	\$ 13,198,783
3.7	Surveying/Staking	1	LS		\$ 1,847,830		\$ -	\$ 1,847,830	\$ -	\$ 1,847,830
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 80,000		\$ -	\$ 80,000	\$ -	\$ 80,000
3.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,639,757		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
3.12	Warranties / LOC's	1	LS		\$ 791,927		\$ -	\$ 791,927	\$ -	\$ 791,927
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS			\$ 238,175	\$ -	\$ -	\$ 238,175	\$ 238,175
3.15	Legal Fees (Real estate)	1.00	LS		-	7,145.25	\$ -	\$ -	\$ 7,145	\$ 7,145
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Bonds	1	LS			\$ 9,320,000	\$ -	\$ -	\$ 9,320,000	\$ 9,320,000
3.18	Sales Tax on Materials	8.8%	LS	\$ 84,922,784			\$ 7,473,205	\$ -	\$ -	\$ 7,473,205
3.19	Contractor Permits	1	LS		\$ 263,976		\$ -	\$ 263,976	\$ -	\$ 263,976
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,112,962	\$ 39,600,811	\$ 15,565,320	\$ 65,279,093

Propel NY - TO52 AS6

AS6.5a Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)

Total: \$ 110,456,330

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.5a Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 817,488	\$ 3,256,333	\$ 1,206,355	\$ 5,280,176
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 7,146,397	\$ 7,446,220	\$ 4,393,625	\$ 18,986,243
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 19,201,491	\$ 11,343,214	\$ 7,301,746	\$ 37,846,451
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,033,414	\$ 9,820,361	\$ 3,039,238	\$ 15,893,013
SUBTOTAL (Costs):	\$ 30,198,790	\$ 31,866,128	\$ 15,940,964	\$ 78,005,883
CONTRACTOR MARK-UP (OH&P)	\$ 5,435,782	\$ 5,735,903	\$ 2,869,374	\$ 14,041,059
SUBTOTAL:	\$ 35,634,573	\$ 37,602,031	\$ 18,810,338	\$ 92,046,942
CONTINGENCY ON ENTIRE PROJECT	\$ 7,126,915	\$ 7,520,406	\$ 3,762,068	\$ 18,409,388
TOTAL:	\$ 42,761,487	\$ 45,122,437	\$ 22,572,405	\$ 110,456,330

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

New Rochelle Landing to New Rochelle Station segment is 1.66 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.5a Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.66	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,162,000	\$ 498,000	\$ 1,660,000
1.3	Flaggers	120	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 192,000	\$ 576,000	\$ 192,000	\$ 960,000
1.4	K Rail / Lane Control / Metal Plates	8,765	LF	\$ 60	\$ 36	\$ 24	\$ 525,888	\$ 315,533	\$ 210,355	\$ 1,051,776
1.5	Police Support	7,200.0	HR		\$ 120	\$ 27	\$ -	\$ 864,000	\$ 194,400	\$ 1,058,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	1.66	Mile	\$ 60,000	\$ 180,000	\$ 60,000	\$ 99,600	\$ 298,800	\$ 99,600	\$ 498,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 817,488	\$ 3,256,333	\$ 1,206,355	\$ 5,280,176
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y57- Line 1&2										
2.1	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.2	Formwork in Trench	68,998	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 137,997	\$ 103,498	\$ 34,499	\$ 275,994
2.3	Trench Excavation	5,106	CY		\$ 17.5	\$ 7.5	\$ -	\$ 89,353	\$ 38,294	\$ 127,647
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	532	CY	\$ 50	\$ 25	\$ 14	\$ 26,593	\$ 13,031	\$ 7,446	\$ 47,070
2.5	Supply & Install Thermal Backfill -conduit level	4,692	CY	\$ 350	\$ 245	\$ 105	\$ 1,642,330	\$ 1,149,631	\$ 492,699	\$ 3,284,659
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,640	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 328,030	\$ 205,019	\$ 82,007	\$ 615,056
2.9	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.10	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.11	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.12	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.13	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.14	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500
2.15	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.16	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,409	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 61,733	\$ 61,733	\$ 30,866	\$ 154,332
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,225	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,412	\$ 28,783	\$ 12,336	\$ 68,531
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	16	EA		\$ 400	\$ 1,200	\$ -	\$ 6,561	\$ 19,682	\$ 26,242
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	16	EA		\$ 10	\$ 15	\$ -	\$ 164	\$ 246	\$ 410
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	47	EA		\$ 400	\$ 1,200	\$ -	\$ 18,769	\$ 56,308	\$ 75,078
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.26	Excess Materials Disposal to Certified Backfill	7,347	CY		\$ 24.5	\$ 10.5	\$ -	\$ 180,012	\$ 77,148	\$ 257,161
2.27	Rock Excavation and Removal	3,924	CY		\$ 243	\$ 162	\$ -	\$ 953,513	\$ 635,675	\$ 1,589,188
2.28	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	5,886	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,886	\$ 2,943	\$ 8,829
LINE Y58-Line 1 & 2										
2.30	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.31	Formwork in Trench	68,998	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 137,997	\$ 103,498	\$ 34,499	\$ 275,994
2.32	Trench Excavation	5,106	CY		\$ 17.5	\$ 7.5	\$ -	\$ 89,353	\$ 38,294	\$ 127,647
2.33	Supply & Install 6" Sand Bedding for direct bury conduits	532	CY	\$ 50	\$ 25	\$ 14	\$ 26,593	\$ 13,031	\$ 7,446	\$ 47,070
2.34	Supply & Install Thermal Backfill -conduit level	4,692	CY	\$ 350	\$ 245	\$ 105	\$ 1,642,330	\$ 1,149,631	\$ 492,699	\$ 3,284,659
2.35	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.36	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.37	Supply & Install Ductbank Concrete	1,640	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 328,030	\$ 205,019	\$ 82,007	\$ 615,056
2.38	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.39	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.40	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.41	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.42	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.43	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500
2.44	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.45	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.46	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.47	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.48	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.49	PVMT, ASPHALT, 2" SURFACE COURSE	4,409	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 61,733	\$ 61,733	\$ 30,866	\$ 154,332
2.50	PVMT, AGGREGATE, 10", BASE COURSE	1,225	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,412	\$ 28,783	\$ 12,336	\$ 68,531
2.51	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	16	EA		\$ 400	\$ 1,200	\$ -	\$ 6,561	\$ 19,682	\$ 26,242
2.52	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	16	EA		\$ 10	\$ 15	\$ -	\$ 164	\$ 246	\$ 410
2.53	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	47	EA		\$ 400	\$ 1,200	\$ -	\$ 18,769	\$ 56,308	\$ 75,078
2.54	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.55	Excess Materials Disposal to Certified Backfill	7,347	CY		\$ 24.5	\$ 10.5	\$ -	\$ 180,012	\$ 77,148	\$ 257,161
2.56	Rock Excavation and Removal	3,924	CY		\$ 243	\$ 162	\$ -	\$ 953,513	\$ 635,675	\$ 1,589,188
2.57	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.58	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.59	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.60	Excavated material - stockpile management	5,886	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,886	\$ 2,943	\$ 8,829
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 7,146,397	\$ 7,446,220	\$ 4,393,625	\$ 18,986,243
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Y57 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.2	Y57 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.3	Y57 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y57 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.5	Y57 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.6	Y57 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Y58 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.8	Y58 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.9	Y58 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.10	Y58 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.11	Y58 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.12	Y58 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.13	Link Box & MH racking	8	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 212,004	\$ 148,403	\$ 63,601	\$ 424,007

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
3.14	Fiber Optic Cable	36,812	FT	\$ 7	\$ 3	\$ 2	\$ 272,300	\$ 122,607	\$ 81,738	\$ 476,644
3.15	Ground Continuity Conductor	36,812	FT	\$ 13	\$ 8	\$ 5	\$ 479,994	\$ 277,085	\$ 184,723	\$ 941,802
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 19,201,491	\$ 11,343,214	\$ 7,301,746	\$ 37,846,451
AS6.5a Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)							\$ 27,165,376	\$ 22,045,767	\$ 12,901,726	\$ 62,112,869
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,048,425	\$ 698,950	\$ -	\$ 1,048,425	\$ 698,950	\$ 1,747,375
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		621,128.69		\$ -	\$ 621,129	\$ -	\$ 621,129
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,484,514.78		\$ -	\$ 2,484,515	\$ -	\$ 2,484,515
4.4	Utility PM and Project Oversight	1.0	LS		621,128.69		\$ -	\$ 621,129	\$ -	\$ 621,129
4.5	Site Accommodation, Facilities, Storage	1.0	LS	621,128.69			\$ 621,129	\$ -	\$ -	\$ 621,129
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,105,643	\$ -	\$ -	\$ 3,105,643	\$ -	\$ 3,105,643
4.7	LiDAR /GPR	1.0	LS		\$ 111,803	\$ 74,535	\$ -	\$ 111,803	\$ 74,535	\$ 186,339
4.8	Geotech	2.0	Location		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 434,790		\$ -	\$ 434,790	\$ -	\$ 434,790
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 80,000		\$ -	\$ 80,000	\$ -	\$ 80,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 621,129		\$ -	\$ 621,129	\$ -	\$ 621,129
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 186,339		\$ -	\$ 186,339	\$ -	\$ 186,339
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,200,000	\$ -	\$ -	\$ 2,200,000	\$ 2,200,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 27,165,376.31			\$ 2,412,285	\$ -	\$ -	\$ 2,412,285
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 62,113	\$ -	\$ -	\$ 62,113	\$ 62,113
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,033,414	\$ 9,820,361	\$ 3,039,238	\$ 15,893,013

Propel NY - TO52 AS6

AS6.5b- New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit

Total: \$ 333,103,631

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.5b- New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,286,976	\$ 11,600,426	\$ 4,444,950	\$ 18,332,352
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 22,313,345	\$ 28,290,112	\$ 22,106,350	\$ 72,709,807
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 48,809,874	\$ 29,550,805	\$ 18,559,479	\$ 96,920,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 8,398,449	\$ 29,274,567	\$ 9,607,345	\$ 47,280,360
SUBTOTAL (Costs):	\$ 81,808,644	\$ 98,715,909	\$ 54,718,124	\$ 235,242,678
CONTRACTOR MARK-UP (OH&P)	\$ 14,725,556	\$ 17,768,864	\$ 9,849,262	\$ 42,343,682
SUBTOTAL:	\$ 96,534,200	\$ 116,484,773	\$ 64,567,387	\$ 277,586,359
CONTINGENCY ON ENTIRE PROJECT	\$ 19,306,840	\$ 23,296,955	\$ 12,913,477	\$ 55,517,272
TOTAL:	\$ 115,841,040	\$ 139,781,728	\$ 77,480,864	\$ 333,103,631

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.
Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.5b- New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.14	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,698,000	\$ 2,442,000	\$ 8,140,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	42,979	LF	\$ 30	\$ 18	\$ 12	\$ 1,289,376	\$ 773,626	\$ 515,750	\$ 2,578,752
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	8.14	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 325,600	\$ 976,800	\$ 325,600	\$ 1,628,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,286,976	\$ 11,600,426	\$ 4,444,950	\$ 18,332,352
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.14	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,137,972	\$ 758,648	\$ 1,896,620
2.2	Formwork in Trench	329,402	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 658,803	\$ 494,102	\$ 164,701	\$ 1,317,606
2.3	Trench Excavation	24,376	CY		\$ 17.5	\$ 7.5	\$ -	\$ 426,575	\$ 182,818	\$ 609,393
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,539	CY	\$ 50	\$ 25	\$ 14	\$ 126,957	\$ 62,209	\$ 35,548	\$ 224,714
2.5	Supply & Install Thermal Backfill -conduit level	22,402	CY	\$ 350	\$ 245	\$ 105	\$ 7,840,559	\$ 5,488,391	\$ 2,352,168	\$ 15,681,117
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,830	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,566,030	\$ 978,769	\$ 391,508	\$ 2,936,306
2.8	Conduit 8" HDPE	257,875	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,296,757	\$ 1,462,152	\$ 626,637	\$ 7,385,546
2.9	Conduit 4" HDPE	85,958	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 461,597	\$ 361,025	\$ 154,725	\$ 977,347
2.10	Conduit 2" HDPE	85,958	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 164,181	\$ 270,769	\$ 116,044	\$ 550,993
2.11	Warning Tape	42,979	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,447	\$ 10,745	\$ 4,298	\$ 21,490
2.12	Trench Box Shoring (Vault)	80	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,446,328	\$ 2,169,492	\$ 3,615,819
2.13	Splice Vault Excavation	15,600	CY		\$ 17.5	\$ 7.5	\$ -	\$ 273,000	\$ 117,000	\$ 390,000
2.14	Splice Vault Supply & Installation	80	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,800,000	\$ 1,320,000	\$ 3,080,000	\$ 7,200,000
2.15	Splice Vault Backfill	4,680	CY		\$ 14.0	\$ 6.0	\$ -	\$ 65,520	\$ 28,080	\$ 93,600
2.16	Jack and Bore along Route	310	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 496,000	\$ 992,000	\$ 992,000	\$ 2,480,000
2.17	HDD along Route	1,494	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 2,390,400	\$ 4,780,800	\$ 4,780,800	\$ 11,952,000
2.18	Air Test Ducts	429,792	LF			\$ 0.25	\$ -	\$ -	\$ 107,448	\$ 107,448
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	25,010	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 350,138	\$ 350,138	\$ 175,069	\$ 875,345
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,947	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 155,478	\$ 163,252	\$ 69,965	\$ 388,695

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	78	EA		\$ 400	\$ 1,200	\$ -	\$ 31,321	\$ 93,962	\$ 125,282
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	78	EA		\$ 10	\$ 15	\$ -	\$ 783	\$ 1,175	\$ 1,958
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	224	EA		\$ 400	\$ 1,200	\$ -	\$ 89,606	\$ 268,819	\$ 358,426
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 444,444	\$ 296,296	\$ -	\$ 444,444	\$ 296,296	\$ 740,740
2.24	Excess Materials Disposal to Certified Backfill	45,884	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,124,169	\$ 481,787	\$ 1,605,955
2.25	Rock Excavation and Removal	26,650	CY		\$ 243	\$ 162	\$ -	\$ 6,476,066	\$ 4,317,378	\$ 10,793,444
2.26	Dewatering	80	EA			\$ 4,000	\$ -	\$ -	\$ 320,000	\$ 320,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,976	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,976	\$ 19,988	\$ 59,964
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 22,313,345	\$ 28,290,112	\$ 22,106,350	\$ 72,709,807
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.13	Link Box & MH racking	80	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,120,036	\$ 1,484,025	\$ 636,011	\$ 4,240,072
3.14	Fiber Optic Cable	90,256	FT	\$ 7	\$ 3	\$ 2	\$ 667,626	\$ 300,608	\$ 200,405	\$ 1,168,639
3.15	Ground Continuity Conductor	90,256	FT	\$ 13	\$ 8	\$ 5	\$ 1,176,852	\$ 679,359	\$ 452,906	\$ 2,309,118
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 48,809,874	\$ 29,550,805	\$ 18,559,479	\$ 96,920,158
AS6.5b- New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit							\$ 73,410,195	\$ 69,441,342	\$ 45,110,780	\$ 187,962,317
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,436,564	\$ 2,291,042	\$ -	\$ 3,436,564	\$ 2,291,042	\$ 5,727,606
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,879,623.17		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		7,518,492.68		\$ -	\$ 7,518,493	\$ -	\$ 7,518,493
4.4	Utility PM and Project Oversight	1.0	LS		1,879,623.17		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,879,623.17			\$ 1,879,623	\$ -	\$ -	\$ 1,879,623
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,398,116	\$ -	\$ -	\$ 9,398,116	\$ -	\$ 9,398,116
4.7	LiDAR /GPR	1.0	LS		\$ 338,332	\$ 225,555	\$ -	\$ 338,332	\$ 225,555	\$ 563,887
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 1,315,736		\$ -	\$ 1,315,736	\$ -	\$ 1,315,736
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,879,623		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 563,887		\$ -	\$ 563,887	\$ -	\$ 563,887
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 219,811	\$ -	\$ -	\$ 219,811	\$ 219,811
4.16	Legal Fees (Real estate)	1.00	LS		-	6,594.33	\$ -	\$ -	\$ 6,594	\$ 6,594
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,660,000	\$ -	\$ -	\$ 6,660,000	\$ 6,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 73,410,195.24			\$ 6,518,825	\$ -	\$ -	\$ 6,518,825
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 187,962	\$ -	\$ -	\$ 187,962	\$ 187,962
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 8,398,449	\$ 29,274,567	\$ 9,607,345	\$ 47,280,360

Propel NY - TO52 AS6

AS6.6 Syosset to Shore Road 138kV Onshore UG Cables -single circuit

Total: \$ 202,306,242

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.6 Syosset to Shore Road 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579
SUBTOTAL (Costs):	\$ 48,389,256	\$ 63,543,409	\$ 30,938,976	\$ 142,871,640
CONTRACTOR MARK-UP (OH&P)	\$ 8,710,066	\$ 11,437,814	\$ 5,569,016	\$ 25,716,895
SUBTOTAL:	\$ 57,099,322	\$ 74,981,222	\$ 36,507,991	\$ 168,588,535
CONTINGENCY ON ENTIRE PROJECT	\$ 11,419,864	\$ 14,996,244	\$ 7,301,598	\$ 33,717,707
TOTAL:	\$ 68,519,186	\$ 89,977,467	\$ 43,809,589	\$ 202,306,242

Description of Work: upgrade the existing underground line ratings of the Oakwood to Syosset and Greenlawn to Syosset circuits to match that of the overhead transmission line ratings of Syosset Transition station to Syosset Substation as an Upgrade to the existing LIPA System

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.6 Syosset to Shore Road 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,875,000	\$ 3,375,000	\$ 11,250,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	59,400	LF	\$ 30	\$ 18	\$ 12	\$ 1,782,000	\$ 1,069,200	\$ 712,800	\$ 3,564,000
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 450,000	\$ 1,350,000	\$ 450,000	\$ 2,250,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,572,750	\$ 1,048,500	\$ 2,621,250
2.2	Formwork in Trench	467,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 934,512	\$ 700,884	\$ 233,628	\$ 1,869,024
2.3	Trench Excavation	35,996	CY		\$ 17.5	\$ 7.5	\$ -	\$ 629,930	\$ 269,970	\$ 899,900
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,250	SF	\$ 50	\$ 25	\$ 14	\$ 112,488	\$ 55,119	\$ 31,497	\$ 199,103
2.5	Supply & Install Thermal Backfill	20,897	CY	\$ 350	\$ 245	\$ 105	\$ 7,313,854	\$ 5,119,698	\$ 2,194,156	\$ 14,627,709
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,222	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,644,482	\$ 1,027,801	\$ 411,120	\$ 3,083,403
2.9	Conduit 6" HDPE	178,200	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,888,920	\$ 1,010,394	\$ 433,026	\$ 3,332,340
2.10	Conduit 4" HDPE	59,400	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 318,978	\$ 249,480	\$ 106,920	\$ 675,378
2.11	Conduit 2" HDPE	59,400	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 113,454	\$ 187,110	\$ 80,190	\$ 380,754
2.12	Warning Tape	59,400	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,910	\$ 14,850	\$ 5,940	\$ 29,700
2.13	Trench Box Shoring (Vault)	33	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 596,610	\$ 894,915	\$ 1,491,525
2.14	Splice Vault Excavation	5,990	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,827	\$ 44,926	\$ 149,753
2.15	Splice Vault Supply & Installation	33	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,155,000	\$ 544,500	\$ 1,270,500	\$ 2,970,000
2.16	Splice Vault Backfill	1,797	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,158	\$ 10,782	\$ 35,941
2.17	Jack and Bore along Route	168	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 134,400	\$ 268,800	\$ 268,800	\$ 672,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	297,000	LF			\$ 0.25	\$ -	\$ -	\$ 74,250	\$ 74,250
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 299,187	\$ 299,187	\$ 149,594	\$ 747,968
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,936	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 132,853	\$ 139,496	\$ 59,784	\$ 332,133
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	82	EA		\$ 400	\$ 1,200	\$ -	\$ 32,890	\$ 98,669	\$ 131,559

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	82	EA		\$ 10	\$ 15	\$ -	\$ 822	\$ 1,233	\$ 2,056
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	209	EA		\$ 400	\$ 1,200	\$ -	\$ 83,587	\$ 250,761	\$ 334,348
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 614,250	\$ 409,500	\$ -	\$ 614,250	\$ 409,500	\$ 1,023,750
2.26	Excess Materials Disposal to Certified Backfill	52,246	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,280,023	\$ 548,581	\$ 1,828,604
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	33	EA			\$ 4,000	\$ -	\$ -	\$ 132,000	\$ 132,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,986	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,986	\$ 20,993	\$ 62,979
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	187,110	FT	\$ 127	\$ 76	\$ 51	\$ 23,762,970	\$ 14,257,782	\$ 9,505,188	\$ 47,525,940
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	99	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 583,902	\$ 974,802	\$ 278,515	\$ 1,837,218
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	33	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 879,747	\$ 527,848	\$ 351,899	\$ 1,759,494
3.11	Fiber Optic Cable	62,370	FT	\$ 7	\$ 3	\$ 2	\$ 461,351	\$ 207,730	\$ 138,486	\$ 807,567
3.12	Ground Continuity Conductor	62,370	FT	\$ 13	\$ 8	\$ 5	\$ 813,242	\$ 469,459	\$ 312,973	\$ 1,595,674
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
AS6.6 Syosset to Shore Road 138kV Onshore UG Cables -single circuit							\$ 43,400,234	\$ 44,927,052	\$ 25,180,776	\$ 113,508,061
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,103,235	\$ 1,402,157	\$ -	\$ 2,103,235	\$ 1,402,157	\$ 3,505,391
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,540,322.45		\$ -	\$ 4,540,322	\$ -	\$ 4,540,322
4.4	Utility PM and Project Oversight	1.0	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,135,080.61			\$ 1,135,081	\$ -	\$ -	\$ 1,135,081
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,675,403	\$ -	\$ -	\$ 5,675,403	\$ -	\$ 5,675,403
4.7	LiDAR /GPR	1.0	LS		\$ 204,315	\$ 136,210	\$ -	\$ 204,315	\$ 136,210	\$ 340,524
4.8	Geotech	12.0	Location		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 794,556		\$ -	\$ 794,556	\$ -	\$ 794,556
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,135,081		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 340,524		\$ -	\$ 340,524	\$ -	\$ 340,524
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 43,190	\$ -	\$ -	\$ 43,190	\$ 43,190
4.16	Legal Fees (Real estate)	1.00	LS		-	1,295.70	\$ -	\$ -	\$ 1,296	\$ 1,296
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,040,000	\$ -	\$ -	\$ 4,040,000	\$ 4,040,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 43,400,234.15			\$ 3,853,941	\$ -	\$ -	\$ 3,853,941
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 113,508	\$ -	\$ -	\$ 113,508	\$ 113,508
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579

NYTrascCo - TO51 AS5

AS6.7 Syosset to Oakwood 138kV Onshore UG Cables -single circuit

Total: \$ 51,165,266

NYTrascCo - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.7 Syosset to Oakwood 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 749,760	\$ 3,808,856	\$ 1,456,104	\$ 6,014,720
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,480,256	\$ 3,823,602	\$ 2,546,068	\$ 9,849,926
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,286,545	\$ 3,941,373	\$ 2,515,051	\$ 12,742,969
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,219,947	\$ 4,841,405	\$ 1,464,696	\$ 7,526,048
SUBTOTAL (Costs):	\$ 11,736,508	\$ 16,415,236	\$ 7,981,918	\$ 36,133,662
CONTRACTOR MARK-UP (OH&P)	\$ 2,112,571	\$ 2,954,742	\$ 1,436,745	\$ 6,504,059
SUBTOTAL:	\$ 13,849,080	\$ 19,369,978	\$ 9,418,664	\$ 42,637,722
CONTINGENCY ON ENTIRE PROJECT	\$ 2,769,816	\$ 3,873,996	\$ 1,883,733	\$ 8,527,544
TOTAL:	\$ 16,618,896	\$ 23,243,974	\$ 11,302,396	\$ 51,165,266

Description of Work: upgrade the existing underground line ratings of the Oakwood to Syosset and Greenlawn to Syosset circuits to match that of the overhead transmission line ratings of Syosset Transition station to Syosset Substation as an Upgrade to the existing LIPA System

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.7 Syosset to Oakwood 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.65	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,855,000	\$ 795,000	\$ 2,650,000
1.3	Flaggers	140	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 224,000	\$ 672,000	\$ 224,000	\$ 1,120,000
1.4	K Rail / Lane Control / Metal Plates	13,992	LF	\$ 30	\$ 18	\$ 12	\$ 419,760	\$ 251,856	\$ 167,904	\$ 839,520
1.5	Police Support	5,600.0	HR		\$ 120	\$ 27	\$ -	\$ 672,000	\$ 151,200	\$ 823,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	2.65	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 106,000	\$ 318,000	\$ 106,000	\$ 530,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 749,760	\$ 3,808,856	\$ 1,456,104	\$ 6,014,720
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	2.65	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 370,470	\$ 246,980	\$ 617,450
2.2	Formwork in Trench	107,936	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 215,872	\$ 161,904	\$ 53,968	\$ 431,744
2.3	Trench Excavation	8,315	CY		\$ 17.5	\$ 7.5	\$ -	\$ 145,514	\$ 62,363	\$ 207,877
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	520	SF	\$ 50	\$ 25	\$ 14	\$ 25,985	\$ 12,732	\$ 7,276	\$ 45,993
2.5	Supply & Install Thermal Backfill	4,827	CY	\$ 350	\$ 245	\$ 105	\$ 1,689,498	\$ 1,182,649	\$ 506,849	\$ 3,378,996
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,899	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 379,875	\$ 237,422	\$ 94,969	\$ 712,265
2.9	Conduit 6" HDPE	41,976	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 444,946	\$ 238,004	\$ 102,002	\$ 784,951
2.10	Conduit 4" HDPE	13,992	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 75,137	\$ 58,766	\$ 25,186	\$ 159,089
2.11	Conduit 2" HDPE	13,992	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 26,725	\$ 44,075	\$ 18,889	\$ 89,689
2.12	Warning Tape	13,992	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 2,099	\$ 3,498	\$ 1,399	\$ 6,996
2.13	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.14	Splice Vault Excavation	1,452	CY		\$ 17.5	\$ 7.5	\$ -	\$ 25,413	\$ 10,891	\$ 36,304
2.15	Splice Vault Supply & Installation	8	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 280,000	\$ 132,000	\$ 308,000	\$ 720,000
2.16	Splice Vault Backfill	436	CY		\$ 14.0	\$ 6.0	\$ -	\$ 6,099	\$ 2,614	\$ 8,713
2.17	Jack and Bore along Route	300	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 240,000	\$ 480,000	\$ 480,000	\$ 1,200,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	69,960	LF			\$ 0.25	\$ -	\$ -	\$ 17,490	\$ 17,490
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,952	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 69,333	\$ 69,333	\$ 34,667	\$ 173,333
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,376	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 30,787	\$ 32,327	\$ 13,854	\$ 76,968
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	19	EA		\$ 400	\$ 1,200	\$ -	\$ 7,597	\$ 22,792	\$ 30,390

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	19	EA		\$ 10	\$ 15	\$ -	\$ 190	\$ 285	\$ 475
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	48	EA		\$ 400	\$ 1,200	\$ -	\$ 19,309	\$ 57,926	\$ 77,234
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 144,690	\$ 96,460	\$ -	\$ 144,690	\$ 96,460	\$ 241,150
2.26	Excess Materials Disposal to Certified Backfill	12,131	CY		\$ 24.5	\$ 10.5	\$ -	\$ 297,211	\$ 127,376	\$ 424,587
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	9,767	CF		\$ 1.0	\$ 0.5	\$ -	\$ 9,767	\$ 4,884	\$ 14,651
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,480,256	\$ 3,823,602	\$ 2,546,068	\$ 9,849,926
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	44,075	FT	\$ 127	\$ 76	\$ 51	\$ 5,597,500	\$ 3,358,500	\$ 2,239,000	\$ 11,194,999
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT		\$ 94	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT		\$ 94	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	14,692	FT	\$ 7	\$ 3	\$ 2	\$ 108,674	\$ 48,932	\$ 32,621	\$ 190,227
3.12	Ground Continuity Conductor	14,692	FT	\$ 13	\$ 8	\$ 5	\$ 191,564	\$ 110,584	\$ 73,722	\$ 375,870
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,286,545	\$ 3,941,373	\$ 2,515,051	\$ 12,742,969
AS6.7 Syosset to Oakwood 138kV Onshore UG Cables -single circuit							\$ 10,516,561	\$ 11,573,831	\$ 6,517,223	\$ 28,607,615
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 542,732	\$ 361,821	\$ -	\$ 542,732	\$ 361,821	\$ 904,553
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		286,076.15		\$ -	\$ 286,076	\$ -	\$ 286,076
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		1,144,304.60		\$ -	\$ 1,144,305	\$ -	\$ 1,144,305
4.4	Utility PM and Project Oversight	1.0	LS		286,076.15		\$ -	\$ 286,076	\$ -	\$ 286,076
4.5	Site Accommodation, Facilities, Storage	1.0	LS	286,076.15			\$ 286,076	\$ -	\$ -	\$ 286,076
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,430,381	\$ -	\$ -	\$ 1,430,381	\$ -	\$ 1,430,381
4.7	LiDAR /GPR	1.0	LS		\$ 51,494	\$ 34,329	\$ -	\$ 51,494	\$ 34,329	\$ 85,823
4.8	Geotech	3.0	Location		2,730.00	1,820.00	\$ -	\$ 8,190	\$ 5,460	\$ 13,650
4.9	Surveying/Staking	1	LS		\$ 200,253		\$ -	\$ 200,253	\$ -	\$ 200,253
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 286,076		\$ -	\$ 286,076	\$ -	\$ 286,076
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 85,823		\$ -	\$ 85,823	\$ -	\$ 85,823
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 14,056	\$ -	\$ -	\$ 14,056	\$ 14,056
4.16	Legal Fees (Real estate)	1.00	LS		-	421.68	\$ -	\$ -	\$ 422	\$ 422
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,020,000	\$ -	\$ -	\$ 1,020,000	\$ 1,020,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 10,516,561.35			\$ 933,871	\$ -	\$ -	\$ 933,871
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 28,608	\$ -	\$ -	\$ 28,608	\$ 28,608
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,219,947	\$ 4,841,405	\$ 1,464,696	\$ 7,526,048

Propel NY - TO52 AS6

AS6.8 East Garden City to Eastern Queens Onshore UG Cables -Double circuit

Total: \$ 426,232,469

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.8 East Garden City to Eastern Queens Onshore UG Cables -Double circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,185,280	\$ 15,969,968	\$ 6,190,512	\$ 25,345,760
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 29,703,720	\$ 29,825,891	\$ 21,226,594	\$ 80,756,206
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 67,483,207	\$ 40,662,384	\$ 26,049,964	\$ 134,195,555
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,316,027	\$ 37,441,733	\$ 11,956,350	\$ 60,714,110
SUBTOTAL (Costs):	\$ 111,688,234	\$ 123,899,976	\$ 65,423,421	\$ 301,011,630
CONTRACTOR MARK-UP (OH&P)	\$ 20,103,882	\$ 22,301,996	\$ 11,776,216	\$ 54,182,093
SUBTOTAL:	\$ 131,792,116	\$ 146,201,971	\$ 77,199,636	\$ 355,193,724
CONTINGENCY ON ENTIRE PROJECT	\$ 26,358,423	\$ 29,240,394	\$ 15,439,927	\$ 71,038,745
TOTAL:	\$ 158,150,540	\$ 175,442,366	\$ 92,639,563	\$ 426,232,469

Description of Work: The proposed 345 kV electric underground transmission line will terminate at the Dunwoodie Substation in the City of Yonkers, Westchester County. The proposed route will be approximately 32.7 miles, utilizing 4000kcmil XLPE cable for the onshore portions and 5000kcmil cable for a marine crossing via Horizontal Directional Drill (HDD) or equivalent trenchless technique. The segment from East Garden City to Eastern Queens is 11.7 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.8 East Garden City to Eastern Queens Onshore UG Cables -Double circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.70	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 8,190,000	\$ 3,510,000	\$ 11,700,000
1.3	Flaggers	540	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 864,000	\$ 2,592,000	\$ 864,000	\$ 4,320,000
1.4	K Rail / Lane Control / Metal Plates	61,776	LF	\$ 30	\$ 18	\$ 12	\$ 1,853,280	\$ 1,111,968	\$ 741,312	\$ 3,706,560
1.5	Police Support	21,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,592,000	\$ 583,200	\$ 3,175,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.70	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 468,000	\$ 1,404,000	\$ 468,000	\$ 2,340,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,185,280	\$ 15,969,968	\$ 6,190,512	\$ 25,345,760
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.70	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,635,660	\$ 1,090,440	\$ 2,726,100
2.2	Formwork in Trench	479,840	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 959,680	\$ 719,760	\$ 239,920	\$ 1,919,360
2.3	Trench Excavation	76,952	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,346,662	\$ 577,141	\$ 1,923,803
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,810	CY	\$ 50	\$ 25	\$ 14	\$ 240,475	\$ 117,833	\$ 67,333	\$ 425,641
2.5	Supply & Install Thermal Backfill -conduit level	32,632	CY	\$ 350	\$ 245	\$ 105	\$ 11,421,358	\$ 7,994,951	\$ 3,426,407	\$ 22,842,717
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	11,406	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,281,239	\$ 1,425,775	\$ 570,310	\$ 4,277,324
2.8	Conduit 8" HDPE	370,656	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 7,613,274	\$ 2,101,620	\$ 900,694	\$ 10,615,588
2.9	Conduit 4" HDPE	123,552	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 663,474	\$ 518,918	\$ 222,394	\$ 1,404,786
2.10	Conduit 2" HDPE	123,552	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 235,984	\$ 389,189	\$ 166,795	\$ 791,968
2.11	Warning Tape	61,776	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 9,266	\$ 15,444	\$ 6,178	\$ 30,888
2.12	Trench Box Shoring (Vault)	74	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,337,853	\$ 2,006,780	\$ 3,344,633
2.13	Splice Vault Excavation	24,050	CY		\$ 17.5	\$ 7.5	\$ -	\$ 420,875	\$ 180,375	\$ 601,250
2.14	Splice Vault Supply & Installation	74	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,590,000	\$ 1,221,000	\$ 2,849,000	\$ 6,660,000
2.15	Splice Vault Backfill	7,215	CY		\$ 14.0	\$ 6.0	\$ -	\$ 101,010	\$ 43,290	\$ 144,300
2.16	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	1,796	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 2,873,600	\$ 5,747,200	\$ 5,747,200	\$ 14,368,000
2.18	Air Test Ducts	617,760	LF			\$ 0.25	\$ -	\$ -	\$ 154,440	\$ 154,440
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	40,331	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 564,641	\$ 564,641	\$ 282,320	\$ 1,411,602

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	11,203	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 250,727	\$ 263,264	\$ 112,827	\$ 626,819
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	114	EA		\$ 400	\$ 1,200	\$ -	\$ 45,625	\$ 136,874	\$ 182,499
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	114	EA		\$ 10	\$ 15	\$ -	\$ 1,141	\$ 1,711	\$ 2,852
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	326	EA		\$ 400	\$ 1,200	\$ -	\$ 130,530	\$ 391,589	\$ 522,119
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 638,820	\$ 425,880	\$ -	\$ 638,820	\$ 425,880	\$ 1,064,700
2.24	Excess Materials Disposal to Certified Backfill	121,923	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,987,120	\$ 1,280,194	\$ 4,267,314
2.25	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.26	Dewatering	74	EA			\$ 4,000	\$ -	\$ -	\$ 296,000	\$ 296,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	101,002	CF		\$ 1.0	\$ 0.5	\$ -	\$ 101,002	\$ 50,501	\$ 151,503
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 29,703,720	\$ 29,825,891	\$ 21,226,594	\$ 80,756,206
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	194,594	FT	\$ 154	\$ 92	\$ 62	\$ 29,967,538	\$ 17,980,523	\$ 11,987,015	\$ 59,935,075
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	111	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,301,142	\$ 910,799	\$ 260,228	\$ 2,472,170
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	194,594	FT	\$ 154	\$ 92	\$ 62	\$ 29,967,538	\$ 17,980,523	\$ 11,987,015	\$ 59,935,075
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	111	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,301,142	\$ 910,799	\$ 260,228	\$ 2,472,170
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.13	Link Box & MH racking	74	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,961,033	\$ 1,372,723	\$ 588,310	\$ 3,922,067
3.14	Fiber Optic Cable	129,730	FT	\$ 7	\$ 3	\$ 2	\$ 959,610	\$ 432,077	\$ 288,052	\$ 1,679,739
3.15	Ground Continuity Conductor	129,730	FT	\$ 13	\$ 8	\$ 5	\$ 1,691,544	\$ 976,475	\$ 650,983	\$ 3,319,002
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 67,483,207	\$ 40,662,384	\$ 26,049,964	\$ 134,195,555
AS6.8 East Garden City to Eastern Queens Onshore UG Cables -Double circuit							\$ 100,372,207	\$ 86,458,243	\$ 53,467,071	\$ 240,297,521
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 4,197,759	\$ 2,798,506	\$ -	\$ 4,197,759	\$ 2,798,506	\$ 6,996,266
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,402,975.21		\$ -	\$ 2,402,975	\$ -	\$ 2,402,975
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		9,611,900.83		\$ -	\$ 9,611,901	\$ -	\$ 9,611,901
4.4	Utility PM and Project Oversight	1.0	LS		2,402,975.21		\$ -	\$ 2,402,975	\$ -	\$ 2,402,975
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,402,975.21			\$ 2,402,975	\$ -	\$ -	\$ 2,402,975
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 12,014,876	\$ -	\$ -	\$ 12,014,876	\$ -	\$ 12,014,876
4.7	LiDAR /GPR	1.0	LS		\$ 432,536	\$ 288,357	\$ -	\$ 432,536	\$ 288,357	\$ 720,893
4.8	Geotech	12.0	Location		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 1,682,083		\$ -	\$ 1,682,083	\$ -	\$ 1,682,083
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,402,975		\$ -	\$ 2,402,975	\$ -	\$ 2,402,975
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 720,893		\$ -	\$ 720,893	\$ -	\$ 720,893
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 84,805	\$ -	\$ -	\$ 84,805	\$ 84,805
4.16	Legal Fees (Real estate)	1.00	LS		-	2,544.15	\$ -	\$ -	\$ 2,544	\$ 2,544
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 8,520,000	\$ -	\$ -	\$ 8,520,000	\$ 8,520,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 100,372,207.05			\$ 8,913,052	\$ -	\$ -	\$ 8,913,052
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 240,298	\$ -	\$ -	\$ 240,298	\$ 240,298
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,316,027	\$ 37,441,733	\$ 11,956,350	\$ 60,714,110

Propel NY - TO52 AS6

AS6.9 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit

Total: \$ 484,260,979

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.9 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,254,400	\$ 25,863,840	\$ 10,328,960	\$ 41,447,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 34,941,450	\$ 43,339,460	\$ 31,669,453	\$ 109,950,363
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 60,773,943	\$ 36,694,040	\$ 23,450,745	\$ 120,918,728
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,689,281	\$ 43,609,012	\$ 14,377,633	\$ 69,675,926
SUBTOTAL (Costs):	\$ 112,659,074	\$ 149,506,352	\$ 79,826,791	\$ 341,992,217
CONTRACTOR MARK-UP (OH&P)	\$ 20,278,633	\$ 26,911,143	\$ 14,368,822	\$ 61,558,599
SUBTOTAL:	\$ 132,937,707	\$ 176,417,495	\$ 94,195,614	\$ 403,550,816
CONTINGENCY ON ENTIRE PROJECT	\$ 26,587,541	\$ 35,283,499	\$ 18,839,123	\$ 80,710,163
TOTAL:	\$ 159,525,248	\$ 211,700,994	\$ 113,034,736	\$ 484,260,979

Description of Work: The proposed 345 kV electric underground transmission line will terminate at the Dunwoodie Substation in the City of Yonkers, Westchester County. The proposed route will be approximately 32.7 miles, utilizing 4000kcmil XLPE cable for the onshore portions and 5000kcmil cable for a marine crossing via Horizontal Directional Drill (HDD) or equivalent trenchless technique. The segment from Eastern Queens to Dunwoodie is 21 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.9 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	21.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 14,700,000	\$ 6,300,000	\$ 21,000,000
1.3	Flaggers	680	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,088,000	\$ 3,264,000	\$ 1,088,000	\$ 5,440,000
1.4	K Rail / Lane Control / Metal Plates	110,880	LF	\$ 30	\$ 18	\$ 12	\$ 3,326,400	\$ 1,995,840	\$ 1,330,560	\$ 6,652,800
1.5	Police Support	27,200.0	HR		\$ 120	\$ 27	\$ -	\$ 3,264,000	\$ 734,400	\$ 3,998,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	21.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 840,000	\$ 2,520,000	\$ 840,000	\$ 4,200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,254,400	\$ 25,863,840	\$ 10,328,960	\$ 41,447,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	21.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,935,800	\$ 1,957,200	\$ 4,893,000
2.2	Formwork in Trench	813,112	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,626,224	\$ 1,219,668	\$ 406,556	\$ 3,252,448
2.3	Trench Excavation	51,068	CY		\$ 17.5	\$ 7.5	\$ -	\$ 893,689	\$ 383,010	\$ 1,276,698
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,386	SF	\$ 50	\$ 25	\$ 14	\$ 219,277	\$ 107,446	\$ 61,397	\$ 388,120
2.5	Supply & Install Thermal Backfill	38,736	CY	\$ 350	\$ 245	\$ 105	\$ 13,557,513	\$ 9,490,259	\$ 4,067,254	\$ 27,115,027
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	15,652	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,130,481	\$ 1,956,551	\$ 782,620	\$ 5,869,652
2.9	Conduit 8" HDPE	332,640	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 6,832,426	\$ 1,886,069	\$ 808,315	\$ 9,526,810
2.10	Conduit 4" HDPE	110,880	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 595,426	\$ 465,696	\$ 199,584	\$ 1,260,706
2.11	Conduit 2" HDPE	110,880	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 211,781	\$ 349,272	\$ 149,688	\$ 710,741
2.12	Warning Tape	110,880	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 16,632	\$ 27,720	\$ 11,088	\$ 55,440
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	17,550	CY		\$ 17.5	\$ 7.5	\$ -	\$ 307,125	\$ 131,625	\$ 438,750
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	5,265	CY		\$ 14.0	\$ 6.0	\$ -	\$ 73,710	\$ 31,590	\$ 105,300
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	6,721	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 5,376,800	\$ 10,753,600	\$ 10,753,600	\$ 26,884,000
2.19	Air Test Ducts	554,400	LF			\$ 0.25	\$ -	\$ -	\$ 138,600	\$ 138,600
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	42,286	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 592,010	\$ 592,010	\$ 296,005	\$ 1,480,025

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	11,746	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 262,881	\$ 276,025	\$ 118,296	\$ 657,202
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	157	EA		\$ 400	\$ 1,200	\$ -	\$ 62,610	\$ 187,829	\$ 250,438
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	157	EA		\$ 10	\$ 15	\$ -	\$ 1,565	\$ 2,348	\$ 3,913
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	387	EA		\$ 400	\$ 1,200	\$ -	\$ 154,943	\$ 464,829	\$ 619,772
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,146,600	\$ 764,400	\$ -	\$ 1,146,600	\$ 764,400	\$ 1,911,000
2.26	Excess Materials Disposal to Certified Backfill	82,359	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,017,791	\$ 864,768	\$ 2,882,559
2.27	Rock Excavation and Removal	24,951	CY		\$ 243	\$ 162	\$ -	\$ 6,062,999	\$ 4,042,000	\$ 10,104,999
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	68,618	CF		\$ 1.0	\$ 0.5	\$ -	\$ 68,618	\$ 34,309	\$ 102,927
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 34,941,450	\$ 43,339,460	\$ 31,669,453	\$ 109,950,363
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	349,272	FT	\$ 154	\$ 92	\$ 62	\$ 53,787,888	\$ 32,272,733	\$ 21,515,155	\$ 107,575,776
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	216	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,531,952	\$ 1,772,366	\$ 506,390	\$ 4,810,709
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	72	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,908,032	\$ 1,335,623	\$ 572,410	\$ 3,816,065
3.11	Fiber Optic Cable	116,424	FT	\$ 7	\$ 3	\$ 2	\$ 861,188	\$ 387,762	\$ 258,508	\$ 1,507,458
3.12	Ground Continuity Conductor	116,424	FT	\$ 13	\$ 8	\$ 5	\$ 1,518,053	\$ 876,323	\$ 584,216	\$ 2,978,592
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 60,773,943	\$ 36,694,040	\$ 23,450,745	\$ 120,918,728
AS6.9 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit							\$ 100,969,793	\$ 105,897,340	\$ 65,449,158	\$ 272,316,291
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,140,395	\$ 3,426,930	\$ -	\$ 5,140,395	\$ 3,426,930	\$ 8,567,325
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,723,162.91		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		10,892,651.66		\$ -	\$ 10,892,652	\$ -	\$ 10,892,652
4.4	Utility PM and Project Oversight	1.0	LS		2,723,162.91		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,723,162.91			\$ 2,723,163	\$ -	\$ -	\$ 2,723,163
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 13,615,815	\$ -	\$ -	\$ 13,615,815	\$ -	\$ 13,615,815
4.7	LiDAR /GPR	1.0	LS		\$ 490,169	\$ 326,780	\$ -	\$ 490,169	\$ 326,780	\$ 816,949
4.8	Geotech	21.0	Location		2,730.00	1,820.00	\$ -	\$ 57,330	\$ 38,220	\$ 95,550
4.9	Surveying/Staking	1	LS		\$ 1,906,214		\$ -	\$ 1,906,214	\$ -	\$ 1,906,214
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,723,163		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 816,949		\$ -	\$ 816,949	\$ -	\$ 816,949
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 613,968	\$ -	\$ -	\$ 613,968	\$ 613,968
4.16	Legal Fees (Real estate)	1.00	LS		-	18,419.04	\$ -	\$ -	\$ 18,419	\$ 18,419
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	100.00%	LS			\$ 9,680,000	\$ -	\$ -	\$ 9,680,000	\$ 9,680,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 100,969,793			\$ 8,966,118	\$ -	\$ -	\$ 8,966,118
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 272,316	\$ -	\$ -	\$ 272,316	\$ 272,316
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,689,281	\$ 43,609,012	\$ 14,377,633	\$ 69,675,926

Propel NY - TO52 AS6

AS6.10a- 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)

Total: \$20,326,067

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.10a- 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$278,400	\$1,065,040	\$393,360	\$1,736,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$1,441,209	\$1,516,850	\$1,073,140	\$4,031,200
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$2,559,647	\$1,718,920	\$1,033,415	\$5,311,982
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$490,798	\$2,207,093	\$576,694	\$3,274,585
SUBTOTAL (Costs):	\$4,770,054	\$6,507,903	\$3,076,610	\$14,354,567
CONTRACTOR MARK-UP (OH&P)	\$858,610	\$1,171,423	\$553,790	\$2,583,822
SUBTOTAL:	\$5,628,664	\$7,679,326	\$3,630,400	\$16,938,390
CONTINGENCY ON ENTIRE PROJECT	\$1,125,733	\$1,535,865	\$726,080	\$3,387,678
TOTAL:	\$6,754,397	\$9,215,191	\$4,356,480	\$20,326,067

Description of Work: The 901 circuit from the point of interception will require an approximate 0.5 double circuit 138 kV construction utilizing 4000kcmil XLPE cable. At the point of intercept for the portion of the 901 cable going to Jamaica an oil stop transition joint will be utilized. Due to the fact that the portion of the 901 cable towards Valley Stream will be limiting it is proposed that that 6 mile portion of the cable will be upgraded using 4000kcmil XLPE cable.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.10a- 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$-	\$-	\$-	\$-	\$-	\$-	\$-
1.2	Existing Utility Conflict and Relocation	0.50	Mile		\$700,000	\$300,000	\$-	\$350,000	\$150,000	\$500,000
1.3	Flaggers	50	DAY	\$1,600	\$4,800	\$1,600	\$80,000	\$240,000	\$80,000	\$400,000
1.4	K Rail / Lane Control / Metal Plates	5,280	LF	\$30	\$18	\$12	\$158,400	\$95,040	\$63,360	\$316,800
1.5	Police Support	2,000.0	HR		\$120	\$27	\$-	\$240,000	\$54,000	\$294,000
1.6	Additional Traffic Management		LS				\$-	\$-	\$-	\$-
1.7	Access / Clearing Costs		LS				\$-	\$-	\$-	\$-
1.8	Snow Removal	20.0	DAY		\$1,000	\$300	\$-	\$20,000	\$6,000	\$26,000
1.9	Existing Utility Protection	1.00	Mile	\$40,000	\$120,000	\$40,000	\$40,000	\$120,000	\$40,000	\$200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$278,400	\$1,065,040	\$393,360	\$1,736,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	1	LS		\$139,800	\$93,200	\$-	\$139,800	\$93,200	\$233,000
2.2	Formwork in Trench	42,240	SF	\$2	\$1.5	\$0.5	\$84,480	\$63,360	\$21,120	\$168,960
2.3	Trench Excavation	3,162	CY		\$17.5	\$7.5	\$-	\$55,328	\$23,712	\$79,040
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	198	CY	\$50	\$25	\$14	\$9,880	\$4,841	\$2,766	\$17,488
2.5	Supply & Install Thermal Backfill	1,748	CY	\$350	\$245	\$105	\$611,800	\$428,260	\$183,540	\$1,223,600
2.6	Supply & Install Concrete Cap (6")	0	CY	\$200	\$125	\$50	\$-	\$-	\$-	\$-
2.7	Supply & Install Concrete duct back encasement	688	CY	\$200	\$125	\$50	\$137,560	\$85,975	\$34,390	\$257,925
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$14.0	\$6.0	\$-	\$-	\$-	\$-
2.9	Conduit 6" HDPE	15,840	LF	\$10.6	\$5.7	\$2.4	\$167,904	\$89,813	\$38,491	\$296,208
2.10	Conduit 4" HDPE	5,280	LF	\$5.4	\$4.20	\$1.8	\$28,354	\$22,176	\$9,504	\$60,034
2.11	Conduit 2" HDPE	5,280	LF	\$1.9	\$3.15	\$1.4	\$10,085	\$16,632	\$7,128	\$33,845
2.12	Warning Tape	5,280	LF	\$0.15	\$0.25	\$0.10	\$792	\$1,320	\$528	\$2,640
2.13	Trench Box Shoring (Vault)	6	EA	\$-	\$18,079	\$27,119	\$-	\$108,475	\$162,712	\$271,186
2.14	Splice Vault Excavation	1,089	CY		\$17.5	\$7.5	\$-	\$19,059	\$8,168	\$27,228
2.15	Splice Vault Supply & Installation	6	EA	\$35,000	\$16,500	\$38,500	\$210,000	\$99,000	\$231,000	\$540,000
2.16	Splice Vault Backfill	327	CY		\$14.0	\$6.0	\$-	\$4,574	\$1,960	\$6,535
2.17	Jack and Bore along Route	0	LF	\$600	\$1,200	\$1,200	\$-	\$-	\$-	\$-
2.18	HDD along Route	0	LF	\$800	\$1,600	\$1,600	\$-	\$-	\$-	\$-

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	26,400	LF			\$ 0.25	\$ -	\$ -	\$ 6,600	\$ 6,600
2.20	Restoration (incl. Paving)	12,882	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 180,355	\$ 180,355	\$ 90,177	\$ 450,887
2.21	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,992	\$ 20,976	\$ 27,968
2.22	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	7	EA		\$ 10	\$ 15	\$ -	\$ 69	\$ 103	\$ 172
2.23	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,992	\$ 20,976	\$ 27,968
2.24	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	2	LS		\$ 27,300	\$ 18,200	\$ -	\$ 54,600	\$ 36,400	\$ 91,000
2.25	Excess Materials Disposal to Certified Backfill	5,101	CY		\$ 24.5	\$ 10.5	\$ -	\$ 124,979	\$ 53,562	\$ 178,541
2.26	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.27	Dewatering	6	EA			\$ 4,000	\$ -	\$ -	\$ 24,000	\$ 24,000
2.28	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Excavated material - stockpile management	4,251	CF		\$ 1.0	\$ 0.5	\$ -	\$ 4,251	\$ 2,125	\$ 6,376
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 1,441,209	\$ 1,516,850	\$ 1,073,140	\$ 4,031,200
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	8,316	FT	\$ 127	\$ 76	\$ 51	\$ 1,056,132	\$ 633,679	\$ 422,453	\$ 2,112,264
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	9	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 53,082	\$ 88,618	\$ 25,320	\$ 167,020
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	8,316	FT	\$ 127	\$ 76	\$ 51	\$ 1,056,132	\$ 633,679	\$ 422,453	\$ 2,112,264
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	9	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 53,082	\$ 88,618	\$ 25,320	\$ 167,020
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT	\$ 127	\$ 76	\$ 51	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	6	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 159,954	\$ 95,972	\$ 63,982	\$ 319,908
3.11	Fiber Optic Cable	5,544	FT	\$ 7	\$ 3	\$ 2	\$ 41,009	\$ 18,465	\$ 12,310	\$ 71,784
3.12	Ground Continuity Conductor	5,544	FT	\$ 13	\$ 8	\$ 5	\$ 72,288	\$ 41,730	\$ 27,820	\$ 141,838
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 2,559,647	\$ 1,718,920	\$ 1,033,415	\$ 5,311,982
AS6.10a- 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)							\$ 4,279,256	\$ 4,300,810	\$ 2,499,916	\$ 11,079,982
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 204,022	\$ 136,015	\$ -	\$ 204,022	\$ 136,015	\$ 340,036
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		110,799.82		\$ -	\$ 110,800	\$ -	\$ 110,800
4.3	Construction Project Management / Supervision	1	LS		443,199.28		\$ -	\$ 443,199	\$ -	\$ 443,199
4.4	Utility PM and Project Oversight	1	LS		110,799.82		\$ -	\$ 110,800	\$ -	\$ 110,800
4.5	Site Accommodation, Facilities, Storage	1	LS	110,799.82			\$ 110,800	\$ -	\$ -	\$ 110,800
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 553,999	\$ -	\$ -	\$ 553,999	\$ -	\$ 553,999
4.7	LiDAR /GPR	1.0	LS		\$ 19,944	\$ 13,296	\$ -	\$ 19,944	\$ 13,296	\$ 33,240
4.8	Geotech	1.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 77,560		\$ -	\$ 77,560	\$ -	\$ 77,560
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 110,800		\$ -	\$ 110,800	\$ -	\$ 110,800
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 33,240		\$ -	\$ 33,240	\$ -	\$ 33,240
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 14,062	\$ -	\$ -	\$ 14,062	\$ 14,062
4.16	Legal Fees (Real estate)	1.00	LS		-	421.86	\$ -	\$ -	\$ 422	\$ 422
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 400,000	\$ -	\$ -	\$ 400,000	\$ 400,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 4,279,256.30			\$ 379,998	\$ -	\$ -	\$ 379,998
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 11,080	\$ -	\$ -	\$ 11,080	\$ 11,080
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 490,798	\$ 2,207,093	\$ 576,694	\$ 3,274,585

Propel NY - TO52 AS6

AS6.10b- 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)

Total: \$ 72,122,497

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.10b- 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 1,049,600	\$ 3,836,160	\$ 1,454,240	\$ 6,340,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 5,407,501	\$ 5,629,339	\$ 3,555,215	\$ 14,592,055
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 9,591,155	\$ 6,065,857	\$ 3,841,349	\$ 19,498,361
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,829,389	\$ 6,605,654	\$ 2,068,508	\$ 10,503,551
SUBTOTAL (Costs):	\$ 17,877,645	\$ 22,137,010	\$ 10,919,312	\$ 50,933,967
CONTRACTOR MARK-UP (OH&P)	\$ 3,217,976	\$ 3,984,662	\$ 1,965,476	\$ 9,168,114
SUBTOTAL:	\$ 21,095,621	\$ 26,121,672	\$ 12,884,788	\$ 60,102,081
CONTINGENCY ON ENTIRE PROJECT	\$ 4,219,124	\$ 5,224,334	\$ 2,576,958	\$ 12,020,416
TOTAL:	\$ 25,314,746	\$ 31,346,006	\$ 15,461,746	\$ 72,122,497

Description of Work: The 903 circuit from the point of interception will require an approximate 2.5 mile double circuit 138 kV construction utilizing 4000kcmil XLPE cable. At the point of interception oil stop transition joints are proposed to connect to the existing cables.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.10b- 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,400,000	\$ 600,000	\$ 2,000,000
1.3	Flaggers	160	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 256,000	\$ 768,000	\$ 256,000	\$ 1,280,000
1.4	K Rail / Lane Control / Metal Plates	21,120	LF	\$ 30	\$ 18	\$ 12	\$ 633,600	\$ 380,160	\$ 253,440	\$ 1,267,200
1.5	Police Support	6,400.0	HR		\$ 120	\$ 27	\$ -	\$ 768,000	\$ 172,800	\$ 940,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	4.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 160,000	\$ 480,000	\$ 160,000	\$ 800,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 1,049,600	\$ 3,836,160	\$ 1,454,240	\$ 6,340,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		Trench length less HDD, J&B, Conduit	20,770.00	(Two trenches)						
2.1	Trench Box Shoring & Trench Box Install Crew	4	LS		\$ 139,800	\$ 93,200	\$ -	\$ 559,200	\$ 372,800	\$ 932,000
2.2	Formwork in Trench	168,960	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 337,920	\$ 253,440	\$ 84,480	\$ 675,840
2.3	Trench Excavation	12,800	CY		\$ 17.5	\$ 7.5	\$ -	\$ 224,008	\$ 96,004	\$ 320,012
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	800	CY	\$ 50	\$ 25	\$ 14	\$ 40,001	\$ 19,601	\$ 11,200	\$ 70,803
2.5	Supply & Install Thermal Backfill	7,077	CY	\$ 350	\$ 245	\$ 105	\$ 2,477,015	\$ 1,733,910	\$ 743,104	\$ 4,954,030
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	2,785	CY	\$ 200	\$ 125	\$ 50	\$ 556,944	\$ 348,090	\$ 139,236	\$ 1,044,269
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 6" HDPE	63,360	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 671,616	\$ 359,251	\$ 153,965	\$ 1,184,832
2.10	Conduit 4" HDPE	21,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 113,414	\$ 88,704	\$ 38,016	\$ 240,134
2.11	Conduit 2" HDPE	21,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 40,339	\$ 66,528	\$ 28,512	\$ 135,379
2.12	Warning Tape	21,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 3,168	\$ 5,280	\$ 2,112	\$ 10,560
2.13	Trench Box Shoring (Vault)	14	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 253,107	\$ 379,661	\$ 632,768
2.14	Splice Vault Excavation	2,541	CY		\$ 17.5	\$ 7.5	\$ -	\$ 44,472	\$ 19,059	\$ 63,531
2.15	Splice Vault Supply & Installation	14	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 490,000	\$ 231,000	\$ 539,000	\$ 1,260,000
2.16	Splice Vault Backfill	762	CY		\$ 14.0	\$ 6.0	\$ -	\$ 10,673	\$ 4,574	\$ 15,248
2.17	Jack and Bore along Route	0	LF	\$ 600	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	105,600	LF			\$ 0.25	\$ -	\$ -	\$ 26,400	\$ 26,400

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	Restoration (incl. Paving)	48,363	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 677,084	\$ 677,084	\$ 338,542	\$ 1,692,709
2.21	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,309	\$ 84,926	\$ 113,235
2.22	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	28	EA		\$ 10	\$ 15	\$ -	\$ 278	\$ 418	\$ 696
2.23	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,309	\$ 84,926	\$ 113,235
2.24	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	2	LS		\$ 109,200	\$ 72,800	\$ -	\$ 218,400	\$ 145,600	\$ 364,000
2.25	Excess Materials Disposal to Certified Backfill	18,953	CY		\$ 24.5	\$ 10.5	\$ -	\$ 464,352	\$ 199,008	\$ 663,361
2.26	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.27	Dewatering	14	EA			\$ 4,000	\$ -	\$ -	\$ 56,000	\$ 56,000
2.28	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Excavated material - stockpile management	15,342	CF		\$ 1.0	\$ 0.5	\$ -	\$ 15,342	\$ 7,671	\$ 23,013
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 5,407,501	\$ 5,629,339	\$ 3,555,215	\$ 14,592,055
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	33,264	FT	\$ 127	\$ 76	\$ 51	\$ 4,224,528	\$ 2,534,717	\$ 1,689,811	\$ 8,449,056
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	21	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 123,858	\$ 206,776	\$ 59,079	\$ 389,713
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	33,264	FT	\$ 127	\$ 76	\$ 51	\$ 4,224,528	\$ 2,534,717	\$ 1,689,811	\$ 8,449,056
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	21	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 123,858	\$ 206,776	\$ 59,079	\$ 389,713
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT	\$ 127	\$ 76	\$ 51	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	14	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 373,226	\$ 223,936	\$ 149,290	\$ 746,452
3.11	Fiber Optic Cable	22,176	FT	\$ 7	\$ 3	\$ 2	\$ 164,036	\$ 73,859	\$ 49,240	\$ 287,135
3.12	Ground Continuity Conductor	22,176	FT	\$ 13	\$ 8	\$ 5	\$ 289,153	\$ 166,919	\$ 111,279	\$ 567,351
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 9,591,155	\$ 6,065,857	\$ 3,841,349	\$ 19,498,361
AS6.10b- 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Conduit (Separate Conduit)							\$ 16,048,256	\$ 15,531,356	\$ 8,850,804	\$ 40,430,416
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 731,465	\$ 487,643	\$ -	\$ 731,465	\$ 487,643	\$ 1,219,108
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		404,304.16		\$ -	\$ 404,304	\$ -	\$ 404,304
4.3	Construction Project Management / Supervision	1	LS		1,617,216.63		\$ -	\$ 1,617,217	\$ -	\$ 1,617,217
4.4	Utility PM and Project Oversight	1	LS		404,304.16		\$ -	\$ 404,304	\$ -	\$ 404,304
4.5	Site Accommodation, Facilities, Storage	1	LS	404,304.16			\$ 404,304	\$ -	\$ -	\$ 404,304
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 2,021,521	\$ -	\$ -	\$ 2,021,521	\$ -	\$ 2,021,521
4.7	LiDAR /GPR	1.0	LS		\$ 72,775	\$ 48,516	\$ -	\$ 72,775	\$ 48,516	\$ 121,291
4.8	Geotech	2.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 283,013		\$ -	\$ 283,013	\$ -	\$ 283,013
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 404,304		\$ -	\$ 404,304	\$ -	\$ 404,304
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 121,291		\$ -	\$ 121,291	\$ -	\$ 121,291
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 46,872	\$ -	\$ -	\$ 46,872	\$ 46,872
4.16	Legal Fees (Real estate)	1.00	LS		-	1,406.16	\$ -	\$ -	\$ 1,406	\$ 1,406
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,440,000	\$ -	\$ -	\$ 1,440,000	\$ 1,440,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 16,048,256.02			\$ 1,425,085	\$ -	\$ -	\$ 1,425,085
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 40,430	\$ -	\$ -	\$ 40,430	\$ 40,430
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,829,389	\$ 6,605,654	\$ 2,068,508	\$ 10,503,551

Propel NY - TO52 AS6

AS6.11 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit

Total: \$ 113,699,531

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.11 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 1,510,400	\$ 7,470,240	\$ 2,974,160	\$ 11,954,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 8,370,529	\$ 9,040,981	\$ 6,123,677	\$ 23,535,186
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 14,026,459	\$ 8,578,169	\$ 5,594,995	\$ 28,199,623
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,759,872	\$ 10,604,137	\$ 3,242,660	\$ 16,606,670
SUBTOTAL (Costs):	\$ 26,667,260	\$ 35,693,527	\$ 17,935,492	\$ 80,296,279
CONTRACTOR MARK-UP (OH&P)	\$ 4,800,107	\$ 6,424,835	\$ 3,228,389	\$ 14,453,330
SUBTOTAL:	\$ 31,467,367	\$ 42,118,362	\$ 21,163,880	\$ 94,749,609
CONTINGENCY ON ENTIRE PROJECT	\$ 6,293,473	\$ 8,423,672	\$ 4,232,776	\$ 18,949,922
TOTAL:	\$ 37,760,840	\$ 50,542,034	\$ 25,396,657	\$ 113,699,531

Description of Work: . It is currently anticipated that a similar route from the point of intercept to Valley Stream Substation would be utilized and would interconnect at the location of the existing 901 circuit. The portion of the existing 901 cable from the point of intercept to the Valley Stream Substation would likely be retired.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.11 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	6.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,200,000	\$ 1,800,000	\$ 6,000,000
1.3	Flaggers	200	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 320,000	\$ 960,000	\$ 320,000	\$ 1,600,000
1.4	K Rail / Lane Control / Metal Plates	31,680	LF	\$ 30	\$ 18	\$ 12	\$ 950,400	\$ 570,240	\$ 380,160	\$ 1,900,800
1.5	Police Support	8,000.0	HR		\$ 120	\$ 27	\$ -	\$ 960,000	\$ 216,000	\$ 1,176,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	6.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 240,000	\$ 720,000	\$ 240,000	\$ 1,200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 1,510,400	\$ 7,470,240	\$ 2,974,160	\$ 11,954,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		Trench length less HDD, J&B, Conduit	30,858.00							
2.1	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 838,800	\$ 559,200	\$ -	\$ 838,800	\$ 559,200	\$ 1,398,000
2.2	Formwork in Trench	245,816	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 491,632	\$ 368,724	\$ 122,908	\$ 983,264
2.3	Trench Excavation	18,937	CY		\$ 17.5	\$ 7.5	\$ -	\$ 331,396	\$ 142,027	\$ 473,423
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,184	CY	\$ 50	\$ 25	\$ 14	\$ 59,178	\$ 28,997	\$ 16,570	\$ 104,745
2.5	Supply & Install Thermal Backfill	10,470	CY	\$ 350	\$ 245	\$ 105	\$ 3,664,479	\$ 2,565,135	\$ 1,099,344	\$ 7,328,959
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	4,120	CY	\$ 200	\$ 125	\$ 50	\$ 823,939	\$ 514,962	\$ 205,985	\$ 1,544,885
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 6" HDPE	95,040	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,007,424	\$ 538,877	\$ 230,947	\$ 1,777,248
2.10	Conduit 4" HDPE	31,680	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 170,122	\$ 133,056	\$ 57,024	\$ 360,202
2.11	Conduit 2" HDPE	31,680	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 60,509	\$ 99,792	\$ 42,768	\$ 203,069
2.12	Warning Tape	31,680	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 4,752	\$ 7,920	\$ 3,168	\$ 15,840
2.13	Trench Box Shoring (Vault)	18	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 325,424	\$ 488,136	\$ 813,559
2.14	Splice Vault Excavation	3,267	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,178	\$ 24,505	\$ 81,683
2.15	Splice Vault Supply & Installation	18	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 630,000	\$ 297,000	\$ 693,000	\$ 1,620,000
2.16	Splice Vault Backfill	980	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,723	\$ 5,881	\$ 19,604
2.17	Jack and Bore along Route	0	LF	\$ 600	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Microtunnel (MTBM)	372	LF	\$ 1,260	\$ 2,205	\$ 2,835	\$ 468,720	\$ 820,260	\$ 1,054,620	\$ 2,343,600

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	Air Test Ducts	158,400	LF			\$ 0.25	\$ -	\$ -	\$ 39,600	\$ 39,600
2.21	Restoration (incl. Paving)	70,698	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 989,774	\$ 989,774	\$ 494,887	\$ 2,474,436
2.22	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	105	EA		\$ 400	\$ 1,200	\$ -	\$ 41,880	\$ 125,639	\$ 167,519
2.23	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	41	EA		\$ 10	\$ 15	\$ -	\$ 412	\$ 618	\$ 1,030
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	105	EA		\$ 400	\$ 1,200	\$ -	\$ 41,880	\$ 125,639	\$ 167,519
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 327,600	\$ 218,400	\$ -	\$ 327,600	\$ 218,400	\$ 546,000
2.26	Excess Materials Disposal to Certified Backfill	27,591	CY		\$ 24.5	\$ 10.5	\$ -	\$ 675,987	\$ 289,709	\$ 965,695
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	18	EA			\$ 4,000	\$ -	\$ -	\$ 72,000	\$ 72,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	22,204	CF		\$ 1.0	\$ 0.5	\$ -	\$ 22,204	\$ 11,102	\$ 33,306
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 8,370,529	\$ 9,040,981	\$ 6,123,677	\$ 23,535,186
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	99,792	FT	\$ 127	\$ 76	\$ 51	\$ 12,673,584	\$ 7,604,150	\$ 5,069,434	\$ 25,347,168
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	27	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 159,246	\$ 265,855	\$ 75,959	\$ 501,060
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	-	FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	-	EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	-	EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	18	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 479,862	\$ 287,917	\$ 191,945	\$ 959,724
3.11	Fiber Optic Cable	33,264	FT	\$ 7	\$ 3	\$ 2	\$ 246,054	\$ 110,789	\$ 73,859	\$ 430,702
3.12	Ground Continuity Conductor	33,264	FT	\$ 13	\$ 8	\$ 5	\$ 433,729	\$ 250,378	\$ 166,919	\$ 851,026
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 14,026,459	\$ 8,578,169	\$ 5,594,995	\$ 28,199,623
AS6.11 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit							\$ 23,907,388	\$ 25,089,390	\$ 14,692,831	\$ 63,689,609
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,193,467	\$ 795,644	\$ -	\$ 1,193,467	\$ 795,644	\$ 1,989,111
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		636,896.09		\$ -	\$ 636,896	\$ -	\$ 636,896
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,547,584.36		\$ -	\$ 2,547,584	\$ -	\$ 2,547,584
4.4	Utility PM and Project Oversight	1.0	LS		636,896.09		\$ -	\$ 636,896	\$ -	\$ 636,896
4.5	Site Accommodation, Facilities, Storage	1.0	LS	636,896.09			\$ 636,896	\$ -	\$ -	\$ 636,896
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,184,480	\$ -	\$ -	\$ 3,184,480	\$ -	\$ 3,184,480
4.7	LiDAR /GPR	1.0	LS		\$ 114,641	\$ 76,428	\$ -	\$ 114,641	\$ 76,428	\$ 191,069
4.8	Geotech	6.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 16,380	\$ 10,920	\$ 27,300
4.9	Surveying/Staking	1	LS		\$ 445,827		\$ -	\$ 445,827	\$ -	\$ 445,827
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 636,896		\$ -	\$ 636,896	\$ -	\$ 636,896
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 191,069		\$ -	\$ 191,069	\$ -	\$ 191,069
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 34,931	\$ -	\$ -	\$ 34,931	\$ 34,931
4.16	Legal Fees (Real estate)	1.00	LS		-	1,047.93	\$ -	\$ -	\$ 1,048	\$ 1,048
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,260,000	\$ -	\$ -	\$ 2,260,000	\$ 2,260,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 23,907,387.74			\$ 2,122,976	\$ -	\$ -	\$ 2,122,976
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 63,690	\$ -	\$ -	\$ 63,690	\$ 63,690
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,759,872	\$ 10,604,137	\$ 3,242,660	\$ 16,606,670

Propel NY - TO52 AS6

AS6.13 East Garden City to Ruland 345kV Onshore UG Cables -single circuit

Total: \$ 14,270,523

Propel NY - TO52 AS6				
	Material Supply	Labor Supply	Equip Supply	Total
AS6.13 East Garden City to Ruland 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 355,831	\$ 1,668,541	\$ 389,094	\$ 2,413,466
SUBTOTAL (Costs):	\$ 3,499,803	\$ 4,546,049	\$ 2,032,200	\$ 10,078,053
CONTRACTOR MARK-UP (OH&P)	\$ 629,965	\$ 818,289	\$ 365,796	\$ 1,814,050
SUBTOTAL:	\$ 4,129,768	\$ 5,364,338	\$ 2,397,997	\$ 11,892,102
CONTINGENCY ON ENTIRE PROJECT	\$ 825,954	\$ 1,072,868	\$ 479,599	\$ 2,378,420
TOTAL:	\$ 4,955,721	\$ 6,437,206	\$ 2,877,596	\$ 14,270,523

Description of Work: reconductoring/conversion of an existing LIPA 138 kV circuit between the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County, to the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County, via the Newbridge Road Substation in the Hamlet of East Meadow in the Town of Hempstead in Nassau County. A new 0.6 mile 345 kV line will be spliced to the existing line, creating a continuous 345 kV feed between the substations. The routing would be the existing underground routing using the LIPA-owned transmission corridors.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS6.13 East Garden City to Ruland 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.63	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 441,000	\$ 189,000	\$ 630,000
1.3	Flaggers	20	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 32,000	\$ 96,000	\$ 32,000	\$ 160,000
1.4	K Rail / Lane Control / Metal Plates	3,326	LF	\$ 30	\$ 18	\$ 12	\$ 99,792	\$ 59,875	\$ 39,917	\$ 199,584
1.5	Police Support	800.0	HR		\$ 120	\$ 27	\$ -	\$ 96,000	\$ 21,600	\$ 117,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	0.63	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 25,200	\$ 75,600	\$ 25,200	\$ 126,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.63	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 88,074	\$ 58,716	\$ 146,790
2.2	Formwork in Trench	25,771	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 51,542	\$ 38,657	\$ 12,886	\$ 103,085
2.3	Trench Excavation	2,224	CY		\$ 17.5	\$ 7.5	\$ -	\$ 38,919	\$ 16,680	\$ 55,599
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	139	SF	\$ 50	\$ 25	\$ 14	\$ 6,950	\$ 3,405	\$ 1,946	\$ 12,301
2.5	Supply & Install Thermal Backfill	1,228	CY	\$ 350	\$ 245	\$ 105	\$ 429,699	\$ 300,789	\$ 128,910	\$ 859,398
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	496	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 99,219	\$ 62,012	\$ 24,805	\$ 186,036
2.9	Conduit 8" HDPE	9,979	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 204,973	\$ 56,582	\$ 24,249	\$ 285,804
2.10	Conduit 4" HDPE	3,326	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 17,863	\$ 13,971	\$ 5,988	\$ 37,821
2.11	Conduit 2" HDPE	3,326	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 6,353	\$ 10,478	\$ 4,491	\$ 21,322
2.12	Warning Tape	3,326	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 499	\$ 832	\$ 333	\$ 1,663
2.13	Trench Box Shoring (Vault)	3	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 54,237	\$ 81,356	\$ 135,593
2.14	Splice Vault Excavation	975	CY		\$ 17.5	\$ 7.5	\$ -	\$ 17,063	\$ 7,313	\$ 24,375
2.15	Splice Vault Supply & Installation	3	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 105,000	\$ 49,500	\$ 115,500	\$ 270,000
2.16	Splice Vault Backfill	293	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,095	\$ 1,755	\$ 5,850
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	16,632	LF			\$ 0.25	\$ -	\$ -	\$ 4,158	\$ 4,158
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	1,387	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 19,417	\$ 19,417	\$ 9,708	\$ 48,542

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	385	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 8,622	\$ 9,053	\$ 3,880	\$ 21,555
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	5	EA		\$ 400	\$ 1,200	\$ -	\$ 1,984	\$ 5,953	\$ 7,938
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	5	EA		\$ 10	\$ 15	\$ -	\$ 50	\$ 74	\$ 124
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	12	EA		\$ 400	\$ 1,200	\$ -	\$ 4,911	\$ 14,733	\$ 19,643
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 34,398	\$ 22,932	\$ -	\$ 34,398	\$ 22,932	\$ 57,330
2.26	Excess Materials Disposal to Certified Backfill	3,778	CY		\$ 24.5	\$ 10.5	\$ -	\$ 92,571	\$ 39,673	\$ 132,244
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	3	EA			\$ 4,000	\$ -	\$ -	\$ 12,000	\$ 12,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	3,199	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,199	\$ 1,599	\$ 4,798
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	10,478	FT	\$ 154	\$ 92	\$ 62	\$ 1,613,637	\$ 968,182	\$ 645,455	\$ 3,227,273
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	9	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 105,498	\$ 73,849	\$ 21,100	\$ 200,446
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	3	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 79,501	\$ 55,651	\$ 23,850	\$ 159,003
3.11	Fiber Optic Cable	3,493	FT	\$ 7	\$ 3	\$ 2	\$ 25,836	\$ 11,633	\$ 7,755	\$ 45,224
3.12	Ground Continuity Conductor	3,493	FT	\$ 13	\$ 8	\$ 5	\$ 45,542	\$ 26,290	\$ 17,526	\$ 89,358
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
AS6.13 East Garden City to Ruland 345kV Onshore UG Cables -single circuit							\$ 3,143,972	\$ 2,877,508	\$ 1,643,106	\$ 7,664,587
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 135,618	\$ 90,412	\$ -	\$ 135,618	\$ 90,412	\$ 226,031
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		306,583.47		\$ -	\$ 306,583	\$ -	\$ 306,583
4.4	Utility PM and Project Oversight	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.5	Site Accommodation, Facilities, Storage	1.0	LS	76,645.87			\$ 76,646	\$ -	\$ -	\$ 76,646
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 383,229	\$ -	\$ -	\$ 383,229	\$ -	\$ 383,229
4.7	LiDAR /GPR	1.0	LS		\$ 13,796	\$ 9,198	\$ -	\$ 13,796	\$ 9,198	\$ 22,994
4.8	Geotech	1.0	Location		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 53,652		\$ -	\$ 53,652	\$ -	\$ 53,652
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 76,646		\$ -	\$ 76,646	\$ -	\$ 76,646
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 22,994		\$ -	\$ 22,994	\$ -	\$ 22,994
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 280,000	\$ -	\$ -	\$ 280,000	\$ 280,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 3,143,972			\$ 279,185	\$ -	\$ -	\$ 279,185
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 7,665	\$ -	\$ -	\$ 7,665	\$ 7,665
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 355,831	\$ 1,668,541	\$ 389,094	\$ 2,413,466

Propel NY - TO52 AS6

Other Misc. Upgrades

Total: \$ 15,301,296

Other Misc. Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Misc. Upgrades				
1. Lake Success-Jamaica Cooling Upgrade	\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 437,200	\$ 1,743,800	\$ 425,000	\$ 2,606,000
CONTRACTOR MARK-UP (OH&P)	\$ 798,696	\$ 731,484	\$ 414,900	\$ 1,945,080
SUBTOTAL:	\$ 5,235,896	\$ 4,795,284	\$ 2,719,900	\$ 12,751,080
CONTINGENCY ON ENTIRE PROJECT	\$ 1,047,179	\$ 959,057	\$ 543,980	\$ 2,550,216
TOTAL:	\$ 6,283,075	\$ 5,754,341	\$ 3,263,880	\$ 15,301,296

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Misc. Upgrades										
1. Lake Success-Jamaica Cooling Upgrade										
1.1	Cooling upgrade	1	LS	4,000,000.00	2,320,000.00	1,880,000.00	\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
1.2							\$ -	\$ -	\$ -	\$ -
1.3							\$ -	\$ -	\$ -	\$ -
							\$ -		\$ -	\$ -
							\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
2.1	138kV Line Upgrade									
							\$ -	\$ -	\$ -	\$ -
TOTAL - :										
3.1	138kV Line Upgrade									
							\$ -	\$ -	\$ -	\$ -
TOTAL - :										
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,000,000.00	\$ 2,320,000.00	\$ 1,880,000.00	\$ 8,200,000.00

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1.0	LS		\$ 126,000	\$ 84,000	\$ -	\$ 126,000	\$ 84,000	\$ 210,000
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,000.00		\$ -	\$ 82,000	\$ -	\$ 82,000
4.3	Construction Project Management / Supervision	1	LS		328,000.00		\$ -	\$ 328,000	\$ -	\$ 328,000
4.4	Utility PM and Project Oversight	1	LS		82,000.00		\$ -	\$ 82,000	\$ -	\$ 82,000
4.5	Site Accommodation, Facilities, Storage	1	LS	82,000.00			\$ 82,000	\$ -	\$ -	\$ 82,000
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 410,000	\$ -	\$ -	\$ 410,000	\$ -	\$ 410,000
4.7	LiDAR	1.00	LS		\$ 14,760	\$ 9,840	\$ -	\$ 14,760	\$ 9,840	\$ 24,600
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,440	\$ 22,960	\$ -	\$ 34,440	\$ 22,960	\$ 57,400
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,000		\$ -	\$ 82,000	\$ -	\$ 82,000
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,600		\$ -	\$ 24,600	\$ -	\$ 24,600
4.15	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,000,000.00			\$ 355,200	\$ -	\$ -	\$ 355,200
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,200	\$ -	\$ -	\$ 8,200	\$ 8,200
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 437,200	\$ 1,743,800	\$ 425,000	\$ 2,606,000

Propel NY - TO51 AS5		
REVISION: 1		
Propel NY - TO51 AS5 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1 - New Rochelle 345kV Substation	\$ 6,440,082
Direct Labor, Material & Equipment Costs	2 - Shore Road 345 kV GIS Substation	\$ 117,294,972
Direct Labor, Material & Equipment Costs	3 - Ruland Road 345/138 kV Substation	\$ 85,451,972
Direct Labor, Material & Equipment Costs	4 - Barrett 345 kV Substation	\$ 56,131,681
Direct Labor, Material & Equipment Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 21,413,864
Direct Labor, Material & Equipment Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	\$ 24,620,968
Direct Labor, Material & Equipment Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 4,984,863
Direct Labor, Material & Equipment Costs	8 -Existing Shore Road 138 kV_ Interconnection	\$ 6,394,174
Direct Labor, Material & Equipment Costs	9 -Existing Holbrook 138 Kv_ Upgrade	\$ 1,013,645
Direct Labor, Material & Equipment Costs	10 -Existing Newbridge 138 Kv_ Upgrade	\$ 2,462,790
Direct Labor, Material & Equipment Costs	11 - Existing EGC 138 kV_ Upgrade	\$ 9,544,442
Direct Labor, Material & Equipment Costs	12 - Existing Rainey 345 kV_ Upgrade	\$ 5,218,315
Direct Labor, Material & Equipment Costs	13 - Existing EGC 345 kV_ Upgrade	\$ 64,707,842
Direct Labor, Material & Equipment Costs	14 -Existing Syosset 138 kV_ Interconnection	\$ 12,405,013
Direct Labor, Material & Equipment Costs	15 - Existing Northport 138 Kv_ Upgrade	\$ 17,691,168
Direct Labor, Material & Equipment Costs	16- Existing Oakwood 138 Kv_ Upgrade	\$ 1,170,915
Direct Labor, Material & Equipment Costs	17 -Existing Syosset 138 Kv_ Transition Station	\$ 1,250,513
SUBTOTAL (Costs):		\$ 438,197,219
CONTRACTOR MARK-UP (OH&P)		\$ 73,397,215
SUBTOTAL (AFTER MU):		\$ 511,594,433
CONTINGENCY ON ENTIRE PROJECT		\$ 102,318,887
Substation TOTAL:		\$ 613,913,320
Transmission Line Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$ 100,737,410
Direct Labor, Material & Equipment Costs	AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 307,723,518
Direct Labor, Material & Equipment Costs	AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit	\$ 7,664,587
Direct Labor, Material & Equipment Costs	AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 118,629,508
Direct Labor, Material & Equipment Costs	AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 202,597,296
Direct Labor, Material & Equipment Costs	AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)	\$ 263,975,655
Direct Labor, Material & Equipment Costs	AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)	\$ 62,112,869
Direct Labor, Material & Equipment Costs	AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit	\$ 187,962,317
Direct Labor, Material & Equipment Costs	AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 113,508,061
Direct Labor, Material & Equipment Costs	AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit	\$ 28,607,615
SUBTOTAL (Costs):		\$ 1,393,518,836
CONTRACTOR MARK-UP (OH&P)		\$ 250,833,391
SUBTOTAL (AFTER MU):		\$ 1,644,352,227
CONTINGENCY ON ENTIRE PROJECT		\$ 328,870,445
Transmission TOTAL:		\$ 1,973,222,672
Propel NY - TO51 AS5Total Direct Cost		\$ 2,587,135,993

Propel NY - TO51 AS5 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1 - New Rochelle 345kV Substation	\$ 4,581,066
Indirect Costs	2 - Shore Road 345 kV GIS Substation	\$ 33,913,650
Indirect Costs	3 - Ruland Road 345/138 kV Substation	\$ 28,895,079
Indirect Costs	4 - Barrett 345 kV Substation	\$ 26,528,456
Indirect Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	\$ 3,217,283
Indirect Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	\$ 5,549,635
Indirect Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 1,610,496
Indirect Costs	8 -Existing Shore Road 138 kV_ Interconnection	\$ 2,026,220
Indirect Costs	9 -Existing Holbrook 138 Kv_ Upgrade	\$ 333,220
Indirect Costs	10 -Existing Newbridge 138 Kv_ Upgrade	\$ 816,867
Indirect Costs	11 - Existing EGC 138 kV_ Upgrade	\$ 2,985,944
Indirect Costs	12 - Existing Rainey 345 kV_ Upgrade	\$ 1,719,879
Indirect Costs	13 - Existing EGC 345 kV_ Upgrade	\$ 49,579,948
Indirect Costs	14 -Existing Syosset 138 kV_ Interconnection	\$ 4,132,015
Indirect Costs	15 - Existing Northport 138 Kv_ Upgrade	\$ 5,940,704
Indirect Costs	16- Existing Oakwood 138 Kv_ Upgrade	\$ 400,361
Indirect Costs	17 -Existing Syosset 138 Kv_ Transition Station	\$ 411,382
SUBTOTAL (Costs):		\$ 172,642,204
CONTRACTOR MARK-UP (OH&P)		\$ 31,075,597
SUBTOTAL (AFTER MU):		\$ 203,717,801
CONTINGENCY ON ENTIRE PROJECT		\$ 40,743,560
Substation TOTAL:		\$ 244,461,361
Transmission Line Indirect Costs		Total Each Segment
Indirect Costs	AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit	\$ 25,517,620
Indirect Costs	AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit	\$ 78,106,163
Indirect Costs	AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit	\$ 2,465,525
Indirect Costs	AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	\$ 30,726,945
Indirect Costs	AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 51,255,552
Indirect Costs	AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)	\$ 65,279,093
Indirect Costs	AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)	\$ 15,893,013
Indirect Costs	AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit	\$ 47,280,360
Indirect Costs	AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 29,363,579
Indirect Costs	AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit	\$ 7,526,048
SUBTOTAL (Costs):		\$ 353,413,897
CONTRACTOR MARK-UP (OH&P)		\$ 63,614,501
SUBTOTAL (AFTER MU):		\$ 417,028,399
CONTINGENCY ON ENTIRE PROJECT		\$ 83,405,680
Transmission Line TOTAL:		\$ 500,434,078
Propel NY - TO51 AS5 Total Indirect Cost		\$ 744,895,440
Propel NY - TO51 AS5 Total		\$ 3,332,031,432

Propel NY - TO51 AS5

1 - New Rochelle 345kV Substation

Total: \$ 15,605,944

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
1 - New Rochelle 345kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS	\$ 303,945	\$ 347,365	\$ 217,103	\$ 868,413
3. SUBSTATION STRUCTURES	\$ 387,784	\$ 370,543	\$ 243,529	\$ 1,001,856
4. MAJOR EQUIPMENT	\$ 1,054,092	\$ 326,781	\$ 140,049	\$ 1,520,922
5. LOW VOLTAGE & CONTROL CABLE	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH	\$ 198,584	\$ 47,246	\$ 14,241	\$ 260,071
7. GROUND GRID	\$ 62,150	\$ 44,329	\$ 10,127	\$ 116,606
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 347,044	\$ 1,411,541	\$ 2,822,480	\$ 4,581,066
SUBTOTAL (Costs):	\$ 3,558,903	\$ 3,404,512	\$ 4,057,732	\$ 11,021,147
CONTRACTOR MARK-UP (OH&P)	\$ 640,603	\$ 612,812	\$ 730,392	\$ 1,983,806
SUBTOTAL:	\$ 4,199,506	\$ 4,017,324	\$ 4,788,124	\$ 13,004,954
CONTINGENCY ON ENTIRE PROJECT	\$ 839,901	\$ 803,465	\$ 957,625	\$ 2,600,991
TOTAL:	\$ 5,039,407	\$ 4,820,789	\$ 5,745,748	\$ 15,605,944

Description of Work: New, greenfield substation to be called “New Rochelle Substation,” which would be 345 kV and located near 60 Echo Avenue in the City of New Rochelle, Westchester County. The substation would allow for the transition of electric submarine transmission cables to electric underground transmission cables at a location outside of the shoreline of Long Island Sound.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1 - New Rochelle 345kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 19,980	\$ 13,320	\$ 33,300
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,698	SY	4.85	7.20	4.80	\$ 17,933	\$ 26,622	\$ 17,748	\$ 62,304
1.4	Strip and Dispose Top Soil	2,985	CY		24.50	10.50	\$ -	\$ 73,124	\$ 31,339	\$ 104,463
1.5	Site Grading- Excavation for Substation Pad	8,954	CY		9.00	6.00	\$ -	\$ 80,586	\$ 53,724	\$ 134,310
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	4,835	CY		21.00	9.00	\$ -	\$ 101,538.36	\$ 43,516.44	\$ 145,054.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,253	CY		2.40	1.60	\$ -	\$ 17,407	\$ 11,604	\$ 29,011
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,835	CY	25.00	2.40	1.60	\$ 120,879	\$ 11,604	\$ 7,736	\$ 140,220
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,954	SY	11.00	6.00	4.00	\$ 98,494	\$ 53,724	\$ 35,816	\$ 188,034
1.11	Site Surfacing - Aggregate 6" Thick	8,954	SY	16.50	4.50	3.00	\$ 147,741	\$ 40,293	\$ 26,862	\$ 214,896
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,285	LF	13.85	13.85	6.92	\$ 17,795	\$ 17,795	\$ 8,897	\$ 44,487
1.13	24' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	328,812.00	38,400.00	25,368.00	\$ 328,812	\$ 38,400	\$ 25,368	\$ 392,580
1.16	Seeding	25,302	SF	1.50	1.50	1.00	\$ 37,953	\$ 37,953	\$ 25,302	\$ 101,208
1.17	Erosion Control-Silt fence install & remove	2,307	LF	2.41	3.16	0.72	\$ 5,560	\$ 7,290	\$ 1,661	\$ 14,511
1.18	Temporary fencing	1,538	LF	7.50	5.25	2.25	\$ 11,535	\$ 8,075	\$ 3,461	\$ 23,070
1.19	Substation entrance with asphalt	1,085	SY	19.50	26.00	19.50	\$ 21,164	\$ 28,219	\$ 21,164	\$ 70,547
1.20	Guardrail	532	LF	24.00	32.00	24.00	\$ 12,768	\$ 17,024	\$ 12,768	\$ 42,560
1.21	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.22	Retaining Wall	1,140	LF	312.00	234.00	234.00	\$ 355,680	\$ 266,760	\$ 266,760	\$ 889,200

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	88	CY	703.89	804.44	502.78	\$ 62,280	\$ 71,177	\$ 44,486	\$ 177,942
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch (Double Break)	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.30	Precast Concrete Piles-12"X80'	-	EA							
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 303,945	\$ 347,365	\$ 217,103	\$ 868,413
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	6	EA	8,346.00	5,758.74	3,839.16	\$ 50,076	\$ 34,552	\$ 23,035	\$ 107,663
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch (Double Break)	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	700	LF	25.00	184.94	123.29	\$ 17,500	\$ 129,457	\$ 86,304	\$ 233,261
3.22	AL. Bus fittings	1	LS	21,000.00	21,000.00	10,500.00	\$ 21,000	\$ 21,000	\$ 10,500	\$ 52,500
3.23	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 387,784	\$ 370,543	\$ 243,529	\$ 1,001,856
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	18	EA	27,144.00	5,460.00	2,340.00	\$ 488,592	\$ 98,280	\$ 42,120	\$ 628,992
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch (Double Break)	6	EA	68,900.00	21,703.50	9,301.50	\$ 413,400	\$ 130,221	\$ 55,809	\$ 599,430
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	18	EA	8,450.00	5,460.00	2,340.00	\$ 152,100	\$ 98,280	\$ 42,120	\$ 292,500
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA		11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		3,150.00	1,350.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.23	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,054,092	\$ 326,781	\$ 140,049	\$ 1,520,922
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,600	LF	5.30	1.43	0.29	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	900	LF	11.15	10.80	5.40	\$ 10,035	\$ 9,720	\$ 4,860	\$ 24,615
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	708	LF	266.50	53.04	13.26	\$ 188,549	\$ 37,526	\$ 9,381	\$ 235,456
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 198,584	\$ 47,246	\$ 14,241	\$ 260,071
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,150	LF	2.09	3.42	1.46	\$ 12,860	\$ 21,004	\$ 9,002	\$ 42,866
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		\$ 29,040	\$ 13,200	\$ -	\$ 42,240
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	\$ 20,250	\$ 10,125	\$ 1,125	\$ 31,500
TOTAL - GROUND GRID							\$ 62,150	\$ 44,329	\$ 10,127	\$ 116,606
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L		EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (Pilot): GE L90		EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.5	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.7	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.8	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
1 - New Rochelle 345kV Substation							\$ 3,211,859	\$ 1,992,971	\$ 1,235,252	\$ 6,440,082
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		112,987.80	48,423.34	\$ -	\$ 112,988	\$ 48,423	\$ 161,411
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		257,603.26		\$ -	\$ 257,603	\$ -	\$ 257,603
9.4	Utility PM and Project Oversight	1.0	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.5	Site Accommodation, Facilities, Storage	1.0	LS	64,400.82			\$ 64,401	\$ -	\$ -	\$ 64,401
	Engineering									
9.6	Design Engineering	1.00	LS		515,206.52		\$ -	\$ 515,207	\$ -	\$ 515,207
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		45,080.57		\$ -	\$ 45,081	\$ -	\$ 45,081
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		241,503.06		\$ -	\$ 241,503	\$ -	\$ 241,503
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		64,400.82		\$ -	\$ 64,401	\$ -	\$ 64,401
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		19,320.24		\$ -	\$ 19,320	\$ -	\$ 19,320
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,393,162.00	\$ -	\$ -	\$ 2,393,162	\$ 2,393,162
9.17	Legal Fees (Real estate)	1.00	LS		-	71,794.86	\$ -	\$ -	\$ 71,795	\$ 71,795
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
9.20	Sales Tax on Materials	8.80%	LS	3,211,858.68			\$ 282,644	\$ -	\$ -	\$ 282,644
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,440.08		\$ -	\$ 6,440	\$ -	\$ 6,440
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 347,044	\$ 1,411,541	\$ 2,822,480	\$ 4,581,066

Propel NY - TO51 AS5

2 - Shore Road 345 kV GIS Substation

Total: \$ 211,019,770

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
2 - Shore Road 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,560,984	\$ 8,254,607	\$ 5,340,843	\$ 18,156,434
2. SUBSTATION FOUNDATIONS	\$ 2,787,295	\$ 2,959,109	\$ 1,859,868	\$ 7,606,272
3. SUBSTATION STRUCTURES	\$ 1,068,782	\$ 555,441	\$ 284,470	\$ 1,908,693
4. MAJOR EQUIPMENT	\$ 68,055,971	\$ 10,067,104	\$ 6,650,052	\$ 84,773,127
5. LOW VOLTAGE & CONTROL CABLE	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH	\$ 655,081	\$ 363,964	\$ 150,412	\$ 1,169,457
7. GROUND GRID	\$ 139,293	\$ 100,038	\$ 23,138	\$ 262,469
8. CONTROL ENCLOSURE	\$ 1,476,102	\$ 1,201,368	\$ 393,734	\$ 3,071,204
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 7,910,757	\$ 20,027,384	\$ 5,975,509	\$ 33,913,650
Turnkey cost (HVDC, GIS)	\$ 10,734,857	\$ 6,440,914	\$ 4,293,943	\$ 21,469,714
Non-Turnkey cost	\$ 76,181,633	\$ 37,159,010	\$ 16,398,265	\$ 129,738,908
SUBTOTAL (Costs):	\$ 86,916,490	\$ 43,599,924	\$ 20,692,208	\$ 151,208,622
CONTRACTOR MARK-UP (OH&P):	\$ 14,356,785	\$ 7,075,077	\$ 3,209,324	\$ 24,641,186
SUBTOTAL:	\$ 101,273,275	\$ 50,675,001	\$ 23,901,532	\$ 175,849,808
CONTINGENCY ON ENTIRE PROJECT	\$ 20,254,655	\$ 10,135,000	\$ 4,780,306	\$ 35,169,962
TOTAL:	\$ 121,527,931	\$ 60,810,001	\$ 28,681,838	\$ 211,019,770

Description of Work: New greenfield 345 kV Shore Road Substation, to be located at 375 Shore Road, in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. The 345 kV Shore Road Substation will serve as the transition station and new connection for the existing LIPA) 138 kV Shore Road Substation. Two (2) new 345 kV underground terrestrial transmission lines with a PAR on each circuit will be converted into four (4) marine transmission lines for crossing Long Island Sound. Also, a 345 kV/138 kV power transformer in series with a 138 kV PAR will connect to the existing LIPA 138 kV substation. Lastly, three(3) 345 kV shunt reactors will be installed for compensation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2 - Shore Road 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 37,800	\$ 25,200	\$ 63,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,099	SY	4.85	7.20	4.80	\$ 15,030	\$ 22,313	\$ 14,875	\$ 52,218
1.4	Strip and Dispose Top Soil	5,647	CY		24.50	10.50	\$ -	\$ 138,343	\$ 59,290	\$ 197,633
1.5	Site Grading- Excavation for Substation Pad	169,400	CY		13.50	9.00	\$ -	\$ 2,286,900	\$ 1,524,600	\$ 3,811,500
1.6	Site Grading- Excavation for Substation Pad- Rock	8,470	CY		243.00	162.00	\$ -	\$ 2,058,210	\$ 1,372,140	\$ 3,430,350
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	91,476	CY		21.00	9.00	\$ -	\$ 1,920,996.00	\$ 823,284.00	\$ 2,744,280.00
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	137,214	CY		2.40	1.60	\$ -	\$ 329,314	\$ 219,542	\$ 548,856
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	91,476	CY	25.00	2.40	1.60	\$ 2,286,900	\$ 219,542	\$ 146,362	\$ 2,652,804
1.10	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.11	Install substation 8" pad base	16,940	SY	11.00	6.00	4.00	\$ 186,340	\$ 101,640	\$ 67,760	\$ 355,740
1.12	Site Surfacing - Aggregate 6" Thick	16,940	SY	16.50	4.50	3.00	\$ 279,510	\$ 76,230	\$ 50,820	\$ 406,560
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,358	LF	13.85	13.85	6.92	\$ 18,806	\$ 18,806	\$ 9,403	\$ 47,014
1.14	20' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.15	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	488,434.80	76,800.00	76,104.00	\$ 488,435	\$ 76,800	\$ 76,104	\$ 641,339
1.17	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.18	Erosion Control-Silt fence install & remove	2,304	LF	2.41	3.16	0.72	\$ 5,553	\$ 7,281	\$ 1,659	\$ 14,492

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Temporary fencing	1,536	LF	7.50	5.25	2.25	\$ 11,520	\$ 8,064	\$ 3,456	\$ 23,040
1.20	Substation entrance with asphalt	282	SY	19.50	26.00	19.50	\$ 5,499	\$ 7,332	\$ 5,499	\$ 18,330
1.21	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.22	Retaining Wall	800	LF	1,560.00	1,170.00	1,170.00	\$ 1,248,000	\$ 936,000	\$ 936,000	\$ 3,120,000
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,560,984	\$ 8,254,607	\$ 5,340,843	\$ 18,156,434
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	142	CY	703.89	804.44	502.78	\$ 100,290	\$ 114,617	\$ 71,635	\$ 286,542
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph, low	22	CY	703.89	804.44	502.78	\$ 15,570	\$ 17,794	\$ 11,121	\$ 44,486
2.4	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, GIS air terminal	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.6	345kV, GIS support-1 Ph	16	CY	703.89	804.44	502.78	\$ 11,431	\$ 13,064	\$ 8,165	\$ 32,660
2.7	345kV, GIS support-3 Ph	330	CY	703.89	804.44	502.78	\$ 232,282	\$ 265,465	\$ 165,916	\$ 663,663
2.8	345kV, GIS Cable sealing end	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.9	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.11	345kV, Shunt Reactor with oil containment-150MVAR	400	CY	703.89	804.44	502.78	\$ 281,554	\$ 321,776	\$ 201,110	\$ 804,440
2.12	345kV, Shunt Reactor with oil containment-100MVAR	150	CY	703.89	804.44	502.78	\$ 105,583	\$ 120,666	\$ 75,416	\$ 301,665
2.13	345kV, Phase Angle Regulator with oil containment	706	CY	703.89	804.44	502.78	\$ 496,943	\$ 567,935	\$ 354,959	\$ 1,419,837
2.14	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Circuit Breaker (GIS), outdoor rated	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.16	345/138 Kv, Control Enclosure-BLDG with generator pad	213	CY	703.89	804.44	502.78	\$ 149,928	\$ 171,346	\$ 107,091	\$ 428,364
2.17	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.18	138kV, Bus support-3 Ph, low	16	CY	703.89	804.44	502.78	\$ 11,431	\$ 13,064	\$ 8,165	\$ 32,660
2.19	138kV, Bus support-1 Ph, low	12	CY	703.89	804.44	502.78	\$ 8,573	\$ 9,798	\$ 6,124	\$ 24,495
2.20	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.22	Firewall Foundation	467	CY	703.89	804.44	502.78	\$ 328,911	\$ 375,899	\$ 234,937	\$ 939,747
2.23	Precast Firewall for transformer, PARs, reactors	16,680	SF	25.00	15.00	10.00	\$ 417,000	\$ 250,200	\$ 166,800	\$ 834,000
2.24	Precast Concrete Piles-12"X80'	-	EA	4,800.00	3,600.00	3,600.00	\$ -	\$ -	\$ -	\$ -
2.25	Local Control Cabinet foundation	7	CY	703.89	804.44	502.78	\$ 4,693	\$ 5,363	\$ 3,352	\$ 13,407
TOTAL - 345KV FOUNDATION							\$ 2,787,295	\$ 2,959,109	\$ 1,859,868	\$ 7,606,272
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	8	EA	23,400.00	14,040.00	9,360.00	\$ 187,200	\$ 112,320	\$ 74,880	\$ 374,400
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph, low	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.4	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.5	345kV, GIS air terminal	24	EA	8,346.00	5,758.74	3,839.16				\$ -
3.6	345kV, GIS support-1 Ph	4	EA	8,346.00	5,758.74	3,839.16				\$ -
3.7	345kV, GIS support-3 Ph	25	EA	4,810.00	2,886.00	1,924.00				\$ -
3.8	345kV, GIS Cable sealing end	6	EA	8,346.00	5,758.74	3,839.16				\$ -
3.9	345kV, CCVT	0	EA							\$ -
3.10	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.11	138kV, Bus support-1 Ph, low	3	EA	2,782.00	1,919.84	1,279.89	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.12	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.13	138kV, Cable sealing end	1	EA	4,066.40	1,443.00	962.00	\$ 4,066	\$ 1,443	\$ 962	\$ 6,471
3.16	AL. Bus Tubing, 5" SCH 80	300	LF	25.00	184.94	123.29	\$ 7,500	\$ 55,481	\$ 36,988	\$ 99,969
3.17	AL. Bus fittings	1	LS	9,000.00	9,000.00	4,500.00	\$ 9,000	\$ 9,000	\$ 4,500	\$ 22,500
3.18	Steel grating and support beams-transformer moat	302,960	LB	2.73	1.17	0.50	\$ 827,631	\$ 354,160	\$ 151,783	\$ 1,333,575
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,068,782	\$ 555,441	\$ 284,470	\$ 1,908,693
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	24	EA							
4.2	345kV, GIS- Cable sealing end	6	EA							
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28		\$ -	\$ -	\$ -
4.4	345/138KV, Power Transformer	1	EA	4,420,000.00	3,520.00	880.00	\$ 4,420,000	\$ 3,520	\$ 880	\$ 4,424,400
4.5	Transport & Testing- Transformer	1	EA		717,400.00	474,600.00	\$ -	\$ 717,400	\$ 474,600	\$ 1,192,000
4.6	345kV, Shunt Reactor -150MVAR	2	EA	2,901,774.00	3,520.00	880.00	\$ 5,803,548	\$ 7,040	\$ 1,760	\$ 5,812,348
4.7	345kV, Shunt Reactor -100MVAR	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.8	Transport & Testing- Shunt Reactor	3	EA		314,399.80	205,933.20	\$ -	\$ 943,199	\$ 617,800	\$ 1,560,999
4.9	345kV, Phase Angle Regulator	2	EA	16,120,693.00	3,520.00	880.00	\$ 32,241,386	\$ 7,040	\$ 1,760	\$ 32,250,186
4.10	Transport & Testing- Phase Angle Regulating Transformer, 345kV	2	EA		615,400.00	406,600.00	\$ -	\$ 1,230,800	\$ 813,200	\$ 2,044,000
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	8	EA	1,341,857.13	805,114.28	536,742.85	\$ 10,734,857	\$ 6,440,914	\$ 4,293,943	\$ 21,469,714
4.15	345kV, GIS Cable sealing end	18	EA				\$ -	\$ -	\$ -	\$ -
4.16	138kV, Phase Angle Regulator	1	EA	11,902,178.00	3,520.00	880.00	\$ 11,902,178	\$ 3,520	\$ 880	\$ 11,906,578
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		603,400.00	398,600.00	\$ -	\$ 603,400	\$ 398,600	\$ 1,002,000
4.18	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300
4.20	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.21	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.22	345kV Gas-Insulated Bus Conductor	3,393	LF	550.00	275.00	82.50				\$ -
4.23	345kV Gas-Insulated Bus Conductor-elbow	90	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 68,055,971	\$ 10,067,104	\$ 6,650,052	\$ 84,773,127
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	49,500	LF	5.30	1.43	0.29	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	8,100	LF	11.15	10.80	5.40	\$ 90,315	\$ 87,480	\$ 43,740	\$ 221,535
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,125	LF	266.50	53.04	13.26	\$ 299,813	\$ 59,670	\$ 14,918	\$ 374,400
6.7										
6.10	138kV UG- Conduit	367	LF	81.00	107.00	57.00	\$ 29,700	\$ 39,233	\$ 20,900	\$ 89,833
6.11	138kV UG- Cable	1,100	LF	156.00	94.00	62.00	\$ 171,600	\$ 103,400	\$ 68,200	\$ 343,200
6.12	138kV UG- Termination	6	EA	9,360.00	11,700.00		\$ 56,160	\$ 70,200	\$ -	\$ 126,360
6.11	Fiber Optic Cable	367	LF	7.40	3.33	2.22	\$ 2,712	\$ 1,221	\$ 814	\$ 4,748
6.12	Ground Continuity Conductor	367	LF	13.04	7.53	5.02	\$ 4,781	\$ 2,760	\$ 1,840	\$ 9,381
TOTAL - CONDUIT & CABLE TRENCH							\$ 655,081	\$ 363,964	\$ 150,412	\$ 1,169,457
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	14,040.0	LF	2.09	3.42	1.46	\$ 29,358	\$ 47,951	\$ 20,550	\$ 97,859
7.2	Caweld, DSA, 4/0 , T, CROSS	384.0	EA	165.00	75.00		\$ 63,360	\$ 28,800	\$ -	\$ 92,160
7.3	Ground Rod, 3/4" x 15'	345.0	EA	135.00	67.50	7.50	\$ 46,575	\$ 23,288	\$ 2,588	\$ 72,450
TOTAL - GROUND GRID							\$ 139,293	\$ 100,038	\$ 23,138	\$ 262,469
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	318,133.59	222,693.51	95,440.08	\$ 318,134	\$ 222,694	\$ 95,440	\$ 636,267
8.2	Primary Line Relays (87L): SEL-411L	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.3	Backup Line Relays (87L): GE L90	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.4	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,476,102	\$ 1,201,368	\$ 393,734	\$ 3,071,204
2 - Shore Road 345 kV GIS Substation							\$ 79,005,733	\$ 23,572,540	\$ 14,716,699	\$ 117,294,972
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		964,403.38	413,315.73	\$ -	\$ 964,403	\$ 413,316	\$ 1,377,719
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		958,252.58		\$ -	\$ 958,253	\$ -	\$ 958,253
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,833,010.33		\$ -	\$ 3,833,010	\$ -	\$ 3,833,010
9.4	Utility PM and Project Oversight	1.0	LS		958,252.58		\$ -	\$ 958,253	\$ -	\$ 958,253
9.5	Site Accommodation, Facilities, Storage	1.0	LS	958,252.58			\$ 958,253	\$ -	\$ -	\$ 958,253
	Engineering									
9.6	Design Engineering	1.00	LS		7,666,020.67		\$ -	\$ 7,666,021	\$ -	\$ 7,666,021
9.7	LIDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		670,776.81		\$ -	\$ 670,777	\$ -	\$ 670,777
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,593,447.19		\$ -	\$ 3,593,447	\$ -	\$ 3,593,447
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		958,252.58		\$ -	\$ 958,253	\$ -	\$ 958,253
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		287,475.77		\$ -	\$ 287,476	\$ -	\$ 287,476
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,294,265.00	\$ -	\$ -	\$ 1,294,265	\$ 1,294,265
9.17	Legal Fees (Real estate)	1.00	LS		-	38,827.95	\$ -	\$ -	\$ 38,828	\$ 38,828
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 4,220,000	\$ -	\$ -	\$ 4,220,000	\$ 4,220,000
9.20	Sales Tax on Materials	8.80%	LS	79,005,733.00			\$ 6,952,505	\$ -	\$ -	\$ 6,952,505
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		117,294.97		\$ -	\$ 117,295	\$ -	\$ 117,295
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,910,757	\$ 20,027,384	\$ 5,975,509	\$ 33,913,650

Propel NY - TO51 AS5

3 - Ruland Road 345/138 kV Substation

Total: \$ 161,915,424

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS	\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES	\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960
4. MAJOR EQUIPMENT	\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH	\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID	\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE	\$ 1,433,684	\$ 1,171,676	\$ 381,008	\$ 2,986,368
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,327,783	\$ 17,796,366	\$ 4,770,929	\$ 28,895,079
SUBTOTAL (Costs):	\$ 68,523,955	\$ 33,122,286	\$ 12,700,810	\$ 114,347,051
CONTRACTOR MARK-UP (OH&P)	\$ 12,334,312	\$ 5,962,012	\$ 2,286,146	\$ 20,582,469
SUBTOTAL:	\$ 80,858,267	\$ 39,084,298	\$ 14,986,956	\$ 134,929,520
CONTINGENCY ON ENTIRE PROJECT	\$ 16,171,653	\$ 7,816,860	\$ 2,997,391	\$ 26,985,904
TOTAL:	\$ 97,029,920	\$ 46,901,157	\$ 17,984,347	\$ 161,915,424

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, to be located on Ruland Road in the Hamlet of Melville, Town of Huntington, Suffolk County. The New substation will consist of a 138 kV air insulated switchgear (“AIS”) six (6) position ring bus substation and a 345 kV AIS six (6) position ring bus substation interconnected by three (3) 345 kV/138 kV power transformers.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3 - Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.3	ACRE	-	10,800.00	7,200.00	\$ -	\$ 68,040	\$ 45,360	\$ 113,400
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,535	SY	4.85	7.20	4.80	\$ 21,995	\$ 32,653	\$ 21,769	\$ 76,417
1.4	Strip and Dispose Top Soil	10,164	CY		24.50	10.50	\$ -	\$ 249,018	\$ 106,722	\$ 355,740
1.5	Site Grading- Excavation for Substation Pad	30,492	CY		9.00	6.00	\$ -	\$ 274,428	\$ 182,952	\$ 457,380
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	16,466	CY		21.00	9.00	\$ -	\$ 345,779.28	\$ 148,191.12	\$ 493,970.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	24,699	CY		2.40	1.60	\$ -	\$ 59,276	\$ 39,518	\$ 98,794
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	16,466	CY	25.00	2.40	1.60	\$ 411,642	\$ 39,518	\$ 26,345	\$ 477,505
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	30,492	SY	11.00	6.00	4.00	\$ 335,412	\$ 182,952	\$ 121,968	\$ 640,332
1.11	Site Surfacing - Aggregate 6" Thick	30,492	SY	16.50	4.50	3.00	\$ 503,118	\$ 137,214	\$ 91,476	\$ 731,808
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,005	LF	13.85	13.85	6.92	\$ 27,765	\$ 27,765	\$ 13,883	\$ 69,413
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	17,200	SF	1.50	1.50	1.00	\$ 25,800	\$ 25,800	\$ 17,200	\$ 68,800
1.17	Erosion Control-Silt fence install & remove	3,393	LF	2.41	3.16	0.72	\$ 8,177	\$ 10,722	\$ 2,443	\$ 21,342
1.18	Temporary fencing	2,262	LF	7.50	5.25	2.25	\$ 16,965	\$ 11,876	\$ 5,090	\$ 33,930
1.19	Substation entrance with asphalt	135	SY	19.50	26.00	19.50	\$ 2,637	\$ 3,516	\$ 2,637	\$ 8,789
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,823,507	\$ 1,594,158	\$ 905,785	\$ 4,323,450
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088
2.2	345kV, A Frame 70'	587	CY	703.89	804.44	502.78	\$ 412,871	\$ 471,852	\$ 294,908	\$ 1,179,631
2.3	345kV, Bus support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	293	CY	703.89	804.44	502.78	\$ 206,266	\$ 235,733	\$ 147,333	\$ 589,333
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.11	345kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.12	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.14	345kV, Shunt Reactor with oil containment-150MVAR	610	CY	703.89	804.44	502.78	\$ 429,370	\$ 490,708	\$ 306,693	\$ 1,226,771
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.17	345kV, Circuit Breaker (PASS)	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	27	CY	703.89	804.44	502.78	\$ 18,770	\$ 21,452	\$ 13,407	\$ 53,629
2.22	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.23	138kV, Bus support-1 Ph, low	110	CY	703.89	804.44	502.78	\$ 77,160	\$ 88,183	\$ 55,114	\$ 220,457
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.26	138kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.27	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.28	Firewall Foundation	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.29	Precast Firewall for transformer, PARs, reactors	1,200	SF	25.00	15.00	10.00	\$ 30,000	\$ 18,000	\$ 12,000	\$ 60,000
2.30	Precast Concrete Piles-12"X80'	212	EA	18,000.00	3,200.00	2,800.00	\$ 3,816,000	\$ 678,400	\$ 593,600	\$ 5,088,000
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	\$ 709,398	\$ 303,566	\$ 130,100	\$ 1,143,064
TOTAL - 345KV FOUNDATION							\$ 7,565,814	\$ 4,440,440	\$ 2,885,996	\$ 14,892,250
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'	4	EA	48,100.00	28,860.00	19,240.00	\$ 192,400	\$ 115,440	\$ 76,960	\$ 384,800
3.3	345kV, Bus support-3 Ph	10	EA	8,346.00	5,758.74	3,839.16	\$ 83,460	\$ 57,587	\$ 38,392	\$ 179,439
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	37	EA	4,810.00	2,886.00	1,924.00	\$ 177,970	\$ 106,782	\$ 71,188	\$ 355,940
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.11	345kV, CCVT	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.12	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.14	138kV, Bus support-1 Ph, low	27	EA	2,782.00	1,919.84	1,279.89	\$ 75,114	\$ 51,836	\$ 34,557	\$ 161,507
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	
3.16	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.17	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.18	138kV, A Frame 50'	3	EA	33,000.00	19,800.00	13,200.00	\$ 99,000	\$ 59,400	\$ 39,600	\$ 198,000
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	2,850	LF	25.00	184.94	123.29	\$ 71,250	\$ 527,073	\$ 351,382	\$ 949,706
3.22	AL. Bus fittings	1	LS	85,500.00	85,500.00	42,750.00	\$ 85,500	\$ 85,500	\$ 42,750	\$ 213,750
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,137,098	\$ 1,218,067	\$ 797,795	\$ 3,152,960

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.4	345kV, CCVT	18	EA	16,900.00	15,941.99	6,832.28	\$ 304,200	\$ 286,956	\$ 122,981	\$ 714,137
4.5	345kV, Disconnect Switch	2	EA	68,900.00	21,703.50	9,301.50	\$ 137,800	\$ 43,407	\$ 18,603	\$ 199,810
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.7	Transport & Testing- Transformer	3	EA		834,400.00	357,600.00	\$ -	\$ 2,503,200	\$ 1,072,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-150MVAR	2	EA	2,901,774.00	3,520.00	880.00	\$ 5,803,548	\$ 7,040	\$ 1,760	\$ 5,812,348
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	\$ -	\$ 769,300	\$ 329,700	\$ 1,099,000
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	16,086,712.00	3,520.00	880.00	\$ 16,086,712	\$ 3,520	\$ 880	\$ 16,091,112
4.12	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.13	345kV, Circuit Breaker (PASS)	8	EA	980,000.00	57,239.00	24,531.00	\$ 7,840,000	\$ 457,912	\$ 196,248	\$ 8,494,160
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	\$ 50,700	\$ 32,760	\$ 14,040	\$ 97,500
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Circuit Breaker (PASS)	6	EA	510,000.00	13,559.00	5,811.00	\$ 3,060,000	\$ 81,354	\$ 34,866	\$ 3,176,220
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.22	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	\$ 180,000	\$ 143,462	\$ 61,484	\$ 384,945
4.23	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 47,598,376	\$ 5,241,630	\$ 2,242,642	\$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	114,000	LF	5.30	1.43	0.29	\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
5.2							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 603,915	\$ 163,305	\$ 32,661	\$ 799,881
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	22,500	LF	11.15	10.80	5.40	\$ 250,875	\$ 243,000	\$ 121,500	\$ 615,375
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	601	LF	266.50	53.04	13.26	\$ 160,167	\$ 31,877	\$ 7,969	\$ 200,013
6.7										
6.8	138kV UG- Conduit	1,775	LF	81.00	107.00	57.00	\$ 143,775	\$ 189,925	\$ 101,175	\$ 434,875
6.9	138kV UG- Cable	6,325	LF	156.00	94.00	62.00	\$ 986,700	\$ 594,550	\$ 392,150	\$ 1,973,400
6.10	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.11	Fiber Optic Cable	1,775	LF	7.40	3.33	2.22	\$ 13,130	\$ 5,912	\$ 3,941	\$ 22,983
6.12	Ground Continuity Conductor	1,775	LF	13.04	7.53	5.02	\$ 23,144	\$ 13,360	\$ 8,907	\$ 45,412
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,746,270	\$ 1,289,224	\$ 635,642	\$ 3,671,137
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,334	LF	2.09	3.42	1.46	\$ 61,337	\$ 100,184	\$ 42,936	\$ 204,458
7.2	Caweld, DSA, 4/0 , T, CROSS	780	EA	165.00	75.00		\$ 128,700	\$ 58,500	\$ -	\$ 187,200
7.3	Ground Rod, 3/4" x 15'	722	EA	135.00	67.50	7.50	\$ 97,470	\$ 48,735	\$ 5,415	\$ 151,620
TOTAL - GROUND GRID							\$ 287,507	\$ 207,419	\$ 48,351	\$ 543,278
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.5	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,433,684	\$ 1,171,676	\$ 381,008	\$ 2,986,368
3 - Ruland Road 345/138 kV Substation							\$ 62,196,172	\$ 15,325,920	\$ 7,929,881	\$ 85,451,972
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		813,953.01	348,837.01	\$ -	\$ 813,953	\$ 348,837	\$ 1,162,790
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,418,078.90		\$ -	\$ 3,418,079	\$ -	\$ 3,418,079
9.4	Utility PM and Project Oversight	1.0	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.5	Site Accommodation, Facilities, Storage	1.0	LS	854,519.72			\$ 854,520	\$ -	\$ -	\$ 854,520
	Engineering									
9.6	Design Engineering	1.00	LS		6,836,157.79		\$ -	\$ 6,836,158	\$ -	\$ 6,836,158
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		598,163.81		\$ -	\$ 598,164	\$ -	\$ 598,164
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,204,448.97		\$ -	\$ 3,204,449	\$ -	\$ 3,204,449
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		854,519.72		\$ -	\$ 854,520	\$ -	\$ 854,520
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		256,355.92		\$ -	\$ 256,356	\$ -	\$ 256,356
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,220,000	\$ -	\$ -	\$ 3,220,000	\$ 3,220,000
9.20	Sales Tax on Materials	8.80%	LS	62,196,172.06			\$ 5,473,263	\$ -	\$ -	\$ 5,473,263
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		85,451.97		\$ -	\$ 85,452	\$ -	\$ 85,452
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,327,783	\$ 17,796,366	\$ 4,770,929	\$ 28,895,079

Propel NY - TO51 AS5

4 - Barrett 345 kV Substation

Total: \$ 117,046,754

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
4 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 906,787	\$ 966,999	\$ 543,829	\$ 2,417,615
2. SUBSTATION FOUNDATIONS	\$ 4,579,333	\$ 2,166,036	\$ 1,453,545	\$ 8,198,913
3. SUBSTATION STRUCTURES	\$ 266,997	\$ 258,797	\$ 169,476	\$ 695,270
4. MAJOR EQUIPMENT	\$ 36,428,028	\$ 3,794,774	\$ 1,623,189	\$ 41,845,990
5. LOW VOLTAGE & CONTROL CABLE	\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
6. CONDUIT & CABLE TRENCH	\$ 190,409	\$ 86,807	\$ 37,092	\$ 314,308
7. GROUND GRID	\$ 121,722	\$ 87,561	\$ 20,297	\$ 229,580
8. CONTROL ENCLOSURE	\$ 1,050,255	\$ 873,416	\$ 295,839	\$ 2,219,510
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,407,133	\$ 15,072,359	\$ 7,048,965	\$ 26,528,456
SUBTOTAL (Costs):	\$ 48,109,587	\$ 23,349,723	\$ 11,200,828	\$ 82,660,137
CONTRACTOR MARK-UP (OH&P)	\$ 8,659,726	\$ 4,202,950	\$ 2,016,149	\$ 14,878,825
SUBTOTAL:	\$ 56,769,313	\$ 27,552,673	\$ 13,216,977	\$ 97,538,962
CONTINGENCY ON ENTIRE PROJECT	\$ 11,353,863	\$ 5,510,535	\$ 2,643,395	\$ 19,507,792
TOTAL:	\$ 68,123,175	\$ 33,063,207	\$ 15,860,372	\$ 117,046,754

Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of Hempstead, Nassau County. The New 345 kV Barrett Substation will serve as the main Point of Interconnection (“POI”)between the generation and transmission operator. The New substation will step up the 138 kV POI voltage to 345 kV, and a new 345 kV underground line will be connected										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 43,200	\$ 28,800	\$ 72,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,053	SY	4.85	7.20	4.80	\$ 14,807	\$ 21,982	\$ 14,654	\$ 51,443
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	\$ -	\$ 158,107	\$ 67,760	\$ 225,867
1.5	Site Grading- Excavation for Substation Pad	19,360	CY		9.00	6.00	\$ -	\$ 174,240	\$ 116,160	\$ 290,400
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	10,454	CY		21.00	9.00	\$ -	\$ 219,542.40	\$ 94,089.60	\$ 313,632.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	15,682	CY		2.40	1.60	\$ -	\$ 37,636	\$ 25,091	\$ 62,726
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	10,454	CY	25.00	2.40	1.60	\$ 261,360	\$ 25,091	\$ 16,727	\$ 303,178
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	19,360	SY	11.00	6.00	4.00	\$ 212,960	\$ 116,160	\$ 77,440	\$ 406,560
1.11	Site Surfacing - Aggregate 6" Thick	19,360	SY	16.50	4.50	3.00	\$ 319,440	\$ 87,120	\$ 58,080	\$ 464,640
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,286	LF	13.85	13.85	6.92	\$ 17,809	\$ 17,809	\$ 8,904	\$ 44,521
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH AND INLET	2	EA	11,160.00	9,600.00	6,342.00	\$ 22,320	\$ 19,200	\$ 12,684	\$ 54,204
1.16	Seeding	3,195	SF	1.50	1.50	1.00	\$ 4,792	\$ 4,792	\$ 3,195	\$ 12,778
1.17	Erosion Control-Silt fence install & remove	2,481	LF	2.41	3.16	0.72	\$ 5,979	\$ 7,840	\$ 1,786	\$ 15,605
1.18	Temporary fencing	1,654	LF	7.50	5.25	2.25	\$ 12,405	\$ 8,684	\$ 3,722	\$ 24,810
1.19	Substation entrance with asphalt	490	SY	19.50	26.00	19.50	\$ 9,555	\$ 12,740	\$ 9,555	\$ 31,850
1.20	Concrete curb	160	LF	26.00	27.30	11.70	\$ 4,160	\$ 4,368	\$ 1,872	\$ 10,400
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 906,787	\$ 966,999	\$ 543,829	\$ 2,417,615
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast foundation	71	CY	703.89	804.44	502.78	\$ 50,145	\$ 57,308	\$ 35,818	\$ 143,271
2.2	345kV, Bus support-3 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.3	345kV, Bus support-1 Ph	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.4	345kV, Cable sealing end	18	CY	703.89	804.44	502.78	\$ 12,797	\$ 14,625	\$ 9,140	\$ 36,562
2.5	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.6	345/138KV, Power Transformer with oil containment	550	CY	703.89	804.44	502.78	\$ 387,137	\$ 442,442	\$ 276,526	\$ 1,106,105
2.7	345kV, Shunt Reactor with oil containment	275	CY	703.89	804.44	502.78	\$ 193,568	\$ 221,221	\$ 138,263	\$ 553,053
2.8	345kV, Circuit Breaker (PASS)	60	CY	703.89	804.44	502.78	\$ 42,233	\$ 48,266	\$ 30,167	\$ 120,666
2.9	345/138 Kv, Control Enclosure-BLDG with generator pad	138	CY	703.89	804.44	502.78	\$ 97,136	\$ 111,013	\$ 69,383	\$ 277,532
2.10	138kV, Phase Angle Regulator	294	CY	703.89	804.44	502.78	\$ 206,942	\$ 236,505	\$ 147,816	\$ 591,263
2.11	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.12	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.13	Firewall Foundation	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.14	Precast Firewall for transformer	5,100	SF	25.00	15.00	10.00	\$ 127,500	\$ 76,500	\$ 51,000	\$ 255,000
2.15	Precast Concrete Piles-12"X80'	158	EA	18,000.00	3,200.00	2,800.00	\$ 2,844,000	\$ 505,600	\$ 442,400	\$ 3,792,000
2.16	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 4,579,333	\$ 2,166,036	\$ 1,453,545	\$ 8,198,913
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast- 90'	4	EA	23,400.00	14,040.00	9,360.00	\$ 93,600	\$ 56,160	\$ 37,440	\$ 187,200
3.2	345kV, Bus support-3 Ph	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.3	345kV, Bus support-1 Ph	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.4	345kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.5	345kV, CCVT	3	EA	4,066.40	1,443.00	962.00	\$ 12,199	\$ 4,329	\$ 2,886	\$ 19,414
3.6	138kV, Disconnect Switch	2	EA	12,251.20	3,928.86	2,619.24	\$ 24,502	\$ 7,858	\$ 5,238	\$ 37,599
3.7	138kV, Cable sealing end	2	EA	4,066.40	1,443.00	962.00	\$ 8,133	\$ 2,886	\$ 1,924	\$ 12,943
3.8	AL. Bus Tubing, 5" SCH 80	611	LF	25.00	184.94	123.29	\$ 15,275	\$ 112,997	\$ 75,331	\$ 203,604
3.9	AL. Bus fittings	1	LS	18,330.00	18,330.00	9,165.00	\$ 18,330	\$ 18,330	\$ 9,165	\$ 45,825
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 266,997	\$ 258,797	\$ 169,476	\$ 695,270
4. MAJOR EQUIPMENT										
4.1	345/138kV, Power Transformer	2	EA	4,420,000.00	3,520.00	880.00	\$ 8,840,000	\$ 7,040	\$ 1,760	\$ 8,848,800
4.2	Transport & Testing- Transformer	2	EA		834,400.00	357,600.00	\$ -	\$ 1,668,800	\$ 715,200	\$ 2,384,000
4.3	Shunt Reactor, 345kV	1	EA	2,385,863.50	3,520.00	880.00	\$ 2,385,864	\$ 3,520	\$ 880	\$ 2,390,264
4.4	Transport & Testing- Shunt Reactor	1	EA		323,400.00	138,600.00	\$ -	\$ 323,400	\$ 138,600	\$ 462,000
4.5	345kV Circuit Breakers, PASS	3	EA	980,000.00	57,239.00	24,531.00	\$ 2,940,000	\$ 171,717	\$ 73,593	\$ 3,185,310
4.6	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.7	345kV, CCVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.8	345kV, Surge arrester	3	EA	8,450.00	4,200.00	1,800.00	\$ 25,350	\$ 12,600	\$ 5,400	\$ 43,350
4.9	Phase Angle Regulating Transformer, 138kV	2	EA	10,713,172.00	3,520.00	880.00	\$ 21,426,344	\$ 7,040	\$ 1,760	\$ 21,435,144
4.10	Transport & Testing- Phase Angle Regulating Transformer, 138kV	2	EA		701,400.00	300,600.00	\$ -	\$ 1,402,800	\$ 601,200	\$ 2,004,000
4.11	138kV, Cable sealing end	6	EA	11,600.00	1,050.00	450.00	\$ 69,600	\$ 6,300	\$ 2,700	\$ 78,600
4.12	138kV, Disconnect Switch- 3 Phase	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.13	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.14	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
TOTAL - MAJOR EQUIPMENT							\$ 36,428,028	\$ 3,794,774	\$ 1,623,189	\$ 41,845,990
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	30,000	LF	5.30	1.43	0.29	\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 158,925	\$ 42,975	\$ 8,595	\$ 210,495
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,700	LF	11.15	10.80	5.40	\$ 63,555	\$ 61,560	\$ 30,780	\$ 155,895
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	476	LF	266.50	53.04	13.26	\$ 126,854	\$ 25,247	\$ 6,312	\$ 158,413

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.7							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 190,409	\$ 86,807	\$ 37,092	\$ 314,308
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	12,330	LF	2.09	3.42	1.46	\$ 25,782	\$ 42,111	\$ 18,047	\$ 85,940
7.2	Caweld, DSA, 4/0 , T, CROSS	336	EA	165.00	75.00		\$ 55,440	\$ 25,200	\$ -	\$ 80,640
7.3	Ground Rod, 3/4" x 15'	300	EA	135.00	67.50	7.50	\$ 40,500	\$ 20,250	\$ 2,250	\$ 63,000
TOTAL - GROUND GRID							\$ 121,722	\$ 87,561	\$ 20,297	\$ 229,580
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	190,880.15	133,616.11	57,264.05	\$ 190,880	\$ 133,616	\$ 57,264	\$ 381,760
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,050,255	\$ 873,416	\$ 295,839	\$ 2,219,510
4 - Barrett 345 kV Substation							\$ 43,702,454	\$ 8,277,364	\$ 4,151,863	\$ 56,131,681
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		435,022.94	186,438.40	\$ -	\$ 435,023	\$ 186,438	\$ 621,461
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,245,267.24		\$ -	\$ 2,245,267	\$ -	\$ 2,245,267
9.4	Utility PM and Project Oversight	1.0	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.5	Site Accommodation, Facilities, Storage	1.0	LS	561,316.81			\$ 561,317	\$ -	\$ -	\$ 561,317
	Engineering									
9.6	Design Engineering	1.00	LS		4,490,534.48		\$ -	\$ 4,490,534	\$ -	\$ 4,490,534
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		392,921.77		\$ -	\$ 392,922	\$ -	\$ 392,922
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,104,938.04		\$ -	\$ 2,104,938	\$ -	\$ 2,104,938
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		561,316.81		\$ -	\$ 561,317	\$ -	\$ 561,317
9.13	Environmental-special studies/investigation	1.00	LS		3,475,000.00		\$ -	\$ 3,475,000	\$ -	\$ 3,475,000
9.14	Warranties / LOC's	1.00	LS		168,395.04		\$ -	\$ 168,395	\$ -	\$ 168,395
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			4,401,385.00	\$ -	\$ -	\$ 4,401,385	\$ 4,401,385
9.17	Legal Fees (Real estate)	1.00	LS		-	132,041.55	\$ -	\$ -	\$ 132,042	\$ 132,042
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,320,000	\$ -	\$ -	\$ 2,320,000	\$ 2,320,000
9.20	Sales Tax on Materials	8.80%	LS	43,702,454.27			\$ 3,845,816	\$ -	\$ -	\$ 3,845,816
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		56,131.68		\$ -	\$ 56,132	\$ -	\$ 56,132
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,407,133	\$ 15,072,359	\$ 7,048,965	\$ 26,528,456

Propel NY - TO51 AS5

5 - Existing 345 kV Tremont Substation GIS Interconnection

Total: \$ 32,771,373

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Existing 345 kV Tremont Substation_GIS_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS	\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH	\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID	\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE	\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283
Turnkey cost (HVDC, GIS)	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
Non-Turnkey cost	\$ 4,776,525	\$ 3,457,247	\$ 1,770,071	\$ 10,003,843
SUBTOTAL (Costs):	\$ 12,090,177	\$ 7,845,439	\$ 4,695,532	\$ 24,631,147
CONTRACTOR MARK-UP (OH&P):	\$ 1,298,594	\$ 885,596	\$ 494,140	\$ 2,678,330
SUBTOTAL:	\$ 13,388,771	\$ 8,731,035	\$ 5,189,672	\$ 27,309,477
CONTINGENCY ON ENTIRE PROJECT	\$ 2,677,754	\$ 1,746,207	\$ 1,037,934	\$ 5,461,895
TOTAL:	\$ 16,066,525	\$ 10,477,241	\$ 6,227,606	\$ 32,771,373

Description of Work: The existing Consolidated Edison Company of New York, Inc. (“Con Edison”) Tremont Substation, located in the Borough of the Bronx, New York City, Bronx County. Tremont Substation is an existing 345 kV AIS substation fed by a single underground 345 kV Line, X-28, which is a Con Edison transmission circuit. The X-28 circuit is connected to a common rigid bus that feeds two (2) 345 kV / 138 kV transformers in parallel. The Solution consists of the termination of a new 345 kV circuit, which requires installing a new 345 kV GIS six-position ring bus within the existing fence-line of the substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Existing 345 kV Tremont Substation_GIS_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	825	LF	2.41	3.16	0.72	\$ 1,988	\$ 2,607	\$ 594	\$ 5,189
1.18	Temporary fencing	300	LF	7.50	5.25	2.25	\$ 2,250	\$ 1,575	\$ 675	\$ 4,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.8	345kV, GIS to air bushing	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.9	345kV, GIS support-1 Ph	45	CY	703.89	804.44	502.78	\$ 31,436	\$ 35,926	\$ 22,454	\$ 89,816
2.10	345kV, GIS support-3 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.11	345kV, GIS Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	125	CY	703.89	804.44	502.78	\$ 87,986	\$ 100,555	\$ 62,847	\$ 251,388
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	93	EA	18,000.00	3,200.00	2,800.00	\$ 1,674,000	\$ 297,600	\$ 260,400	\$ 2,232,000
2.33	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	12	EA	8,346.00	5,758.74	3,839.16				
3.8	345kV, GIS to air bushing	9	EA	4,810.00	2,886.00	1,924.00				
3.9	345kV, GIS support-1 Ph	11	EA	4,810.00	2,886.00	1,924.00				
3.10	345kV, GIS support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16				
3.11	345kV, GIS Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16				
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.4	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.5	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.6	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,218,942.00	731,365.20	487,576.80	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
4.13	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.15	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.16	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	23,400	LF	5.30	1.43	0.29	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6" , SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4" , SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3" , SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2" , SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1" , SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,452	LF	2.09	3.42	1.46	\$ 3,036	\$ 4,959	\$ 2,125	\$ 10,120
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	171,028.62	119,720.03	51,308.59	\$ 171,029	\$ 119,720	\$ 51,309	\$ 342,057
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
5 - Existing 345 kV Tremont Substation_GIS_Interconnection							\$ 11,049,919	\$ 6,363,269	\$ 4,000,677	\$ 21,413,864
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		106,760.29	45,754.41	\$ -	\$ 106,760	\$ 45,754	\$ 152,515
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		271,462.42		\$ -	\$ 271,462	\$ -	\$ 271,462
9.4	Utility PM and Project Oversight	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.5	Site Accommodation, Facilities, Storage	1.0	LS	67,865.60			\$ 67,866	\$ -	\$ -	\$ 67,866
	Engineering									
9.6	Design Engineering	1.00	LS		542,924.84		\$ -	\$ 542,925	\$ -	\$ 542,925
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		47,505.92		\$ -	\$ 47,506	\$ -	\$ 47,506
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		254,496.02		\$ -	\$ 254,496	\$ -	\$ 254,496
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.14	Warranties / LOC's	1.00	LS		20,359.68		\$ -	\$ 20,360	\$ -	\$ 20,360
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			83,963.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	2,518.89	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 640,000	\$ -	\$ -	\$ 640,000	\$ 640,000
9.20	Sales Tax on Materials	8.80%	LS	11,049,918.55			\$ 972,393	\$ -	\$ -	\$ 972,393
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		21,413.86		\$ -	\$ 21,414	\$ -	\$ 21,414
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283

Propel NY - TO51 AS5

6 - Existing Sprain Brook 345 kV Interconnection

Total: \$ 41,345,604

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
6 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 212,245	\$ 195,170	\$ 108,661	\$ 516,077
2. SUBSTATION FOUNDATIONS	\$ 596,587	\$ 681,814	\$ 426,133	\$ 1,704,534
3. SUBSTATION STRUCTURES	\$ 512,697	\$ 521,222	\$ 316,834	\$ 1,350,753
4. MAJOR EQUIPMENT	\$ 11,835,133	\$ 3,612,445	\$ 2,355,173	\$ 17,802,751
5. LOW VOLTAGE & CONTROL CABLE	\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
6. CONDUIT & CABLE TRENCH	\$ 971,587	\$ 618,043	\$ 347,203	\$ 1,936,833
7. GROUND GRID	\$ 104,399	\$ 68,802	\$ 13,147	\$ 186,348
8. CONTROL ENCLOSURE	\$ 469,219	\$ 375,375	\$ 93,844	\$ 938,437
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,456,728	\$ 3,188,784	\$ 904,124	\$ 5,549,635
Turnkey cost (HVDC, GIS)	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
Non-Turnkey cost	\$ 11,520,771	\$ 6,432,866	\$ 2,661,611	\$ 20,615,248
SUBTOTAL (Costs):	\$ 16,298,449	\$ 9,299,472	\$ 4,572,682	\$ 30,170,604
CONTRACTOR MARK-UP (OH&P):	\$ 2,360,399	\$ 1,329,912	\$ 593,754	\$ 4,284,066
SUBTOTAL:	\$ 18,658,848	\$ 10,629,385	\$ 5,166,437	\$ 34,454,670
CONTINGENCY ON ENTIRE PROJECT	\$ 3,731,770	\$ 2,125,877	\$ 1,033,287	\$ 6,890,934
TOTAL:	\$ 22,390,618	\$ 12,755,262	\$ 6,199,724	\$ 41,345,604

Description of Work: Interconnection Facilities to the existing Con Edison Sprain Brook Substation, located in the City of Yonkers, Westchester County. Sprain Brook Substation is an existing 345 kV AIS substation with a BAAH configuration. The Solution includes installing two new underground 345 kV lines each with a shunt reactor each, in the new bay position

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing Sprain Brook 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,640	\$ 5,760	\$ 14,400
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	962	SY	4.85	7.20	4.80	\$ 4,667	\$ 6,928	\$ 4,619	\$ 16,213
1.4	Strip and Dispose Top Soil	1,291	CY		24.50	10.50	\$ -	\$ 31,621	\$ 13,552	\$ 45,173
1.5	Site Grading- Excavation for Substation Pad	3,872	CY		9.00	6.00	\$ -	\$ 34,848	\$ 23,232	\$ 58,080
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,091	CY		21.00	9.00	\$ -	\$ 43,908.48	\$ 18,817.92	\$ 62,726.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	3,136	CY		2.40	1.60	\$ -	\$ 7,527	\$ 5,018	\$ 12,545
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,091	CY	25.00	2.40	1.60	\$ 52,272	\$ 5,018	\$ 3,345	\$ 60,636
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	3,872	SY	11.00	6.00	4.00	\$ 42,592	\$ 23,232	\$ 15,488	\$ 81,312
1.11	Site Surfacing - Aggregate 6" Thick	3,872	SY	16.50	4.50	3.00	\$ 63,888	\$ 17,424	\$ 11,616	\$ 92,928
1.12	7' Station Fence w/ Barbed Wire & Grounding	350	LF	13.85	13.85	6.92	\$ 4,847	\$ 4,847	\$ 2,423	\$ 12,117
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	1	LS	40,089.60	7,680.00	3,624.00	\$ 40,090	\$ 7,680	\$ 3,624	\$ 51,394
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302
1.17	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.18	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.19	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.20	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 212,245	\$ 195,170	\$ 108,661	\$ 516,077
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	188	CY	703.89	804.44	502.78	\$ 132,344	\$ 151,251	\$ 94,532	\$ 378,127
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	37	CY	703.89	804.44	502.78	\$ 25,720	\$ 29,394	\$ 18,371	\$ 73,486
2.8	345kV, GIS to air bushing	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.9	345kV, GIS support-1 Ph	24	CY	703.89	804.44	502.78	\$ 17,147	\$ 19,596	\$ 12,248	\$ 48,990
2.10	345kV, GIS support-3 Ph	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.11	345kV, GIS Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.12	345kV, Cable sealing end	53	CY	703.89	804.44	502.78	\$ 37,165	\$ 42,474	\$ 26,547	\$ 106,186
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	252	CY	703.89	804.44	502.78	\$ 177,379	\$ 202,719	\$ 126,699	\$ 506,797
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.20	345kV, Circuit Breaker (GIS), outdoor rated	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80"		EA							
2.33	Local Control Cabinet foundation	3	CY	703.89	804.44	502.78	\$ 2,086	\$ 2,384	\$ 1,490	\$ 5,959
TOTAL - 345KV FOUNDATION							\$ 596,587	\$ 681,814	\$ 426,133	\$ 1,704,534
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	17	EA	8,346.00	5,758.74	3,839.16	\$ 141,882	\$ 97,899	\$ 65,266	\$ 305,046
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	9	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.12	345kV, Cable sealing end	4	EA	8,346.00	5,758.74	3,839.16	\$ 33,384	\$ 23,035	\$ 15,357	\$ 71,776
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	1,311	LF	25.00	184.94	123.29	\$ 32,775	\$ 242,454	\$ 161,636	\$ 436,865
3.24	AL. Bus fittings	1	LS	39,330.00	39,330.00	19,665.00	\$ 39,330	\$ 39,330	\$ 19,665	\$ 98,325
3.25	Steel grating and support beams-transformer moat	86,560	LB	2.73	1.17	0.50	\$ 236,466	\$ 101,189	\$ 43,367	\$ 381,021
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 512,697	\$ 521,222	\$ 316,834	\$ 1,350,753
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -			
4.2	345kV, GIS fast acting GND SW	9	EA				\$ -			
4.3	345kV, GIS to air bushing	6	EA				\$ -			
4.4	345kV, GIS Cable sealing end	6	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	12	EA	27,144.00	5,460.00	2,340.00	\$ 325,728	\$ 65,520	\$ 28,080	\$ 419,328
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	2	EA	2,385,863.50	3,520.00	880.00	\$ 4,771,727	\$ 7,040	\$ 1,760	\$ 4,780,527
4.12	Transport & Testing- Shunt Reactor	2	EA		279,400.00	182,600.00	\$ -	\$ 558,800	\$ 365,200	\$ 924,000
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	2	EA	980,000.00	57,239.00	24,531.00	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	4	EA	1,194,419.50	716,651.70	477,767.80	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor	564	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	10	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 11,835,133	\$ 3,612,445	\$ 2,355,173	\$ 17,802,751

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	26,400	LF	5.30	1.43	0.29	\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 139,854	\$ 37,818	\$ 7,564	\$ 185,236
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	4,200	LF	3.95	10.80	5.40	\$ 16,590	\$ 45,360	\$ 22,680	\$ 84,630
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG- Conduit	1,000	LF	266.73	202.15	100.00	\$ 266,731	\$ 202,146	\$ 100,005	\$ 568,882
6.8	345kV UG- Cable	3,000	LF	167.00	100.20	66.80	\$ 501,000	\$ 300,600	\$ 200,400	\$ 1,002,000
6.9	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.14	Fiber Optic Cable	1,000	LF	7.40	3.33	2.22	\$ 7,397	\$ 3,331	\$ 2,220	\$ 12,948
6.15	Ground Continuity Conductor	1,000	LF	13.04	7.53	5.02	\$ 13,039	\$ 7,527	\$ 5,018	\$ 25,584
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 971,587	\$ 618,043	\$ 347,203	\$ 1,936,833
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	8,357	LF	2.09	3.42	1.46	\$ 17,474	\$ 28,542	\$ 12,232	\$ 58,248
7.2	Caweld, DSA, 4/0 , T, CROSS	427	EA	165.00	75.00		\$ 70,455	\$ 32,025	\$ -	\$ 102,480
7.3	Ground Rod, 3/4" x 15'	122	EA	135.00	67.50	7.50	\$ 16,470	\$ 8,235	\$ 915	\$ 25,620
TOTAL - GROUND GRID							\$ 104,399	\$ 68,802	\$ 13,147	\$ 186,348
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.9	Backup Bus Differential Relays: GE B90	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 469,219	\$ 375,375	\$ 93,844	\$ 938,437
6 - Existing Sprain Brook 345 kV_ Interconnection							\$ 14,841,721	\$ 6,110,688	\$ 3,668,559	\$ 24,620,968
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		175,054.91	75,023.53	\$ -	\$ 175,055	\$ 75,024	\$ 250,078
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		150,656.12		\$ -	\$ 150,656	\$ -	\$ 150,656
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		602,624.49		\$ -	\$ 602,624	\$ -	\$ 602,624
9.4	Utility PM and Project Oversight	1.0	LS		150,656.12		\$ -	\$ 150,656	\$ -	\$ 150,656
9.5	Site Accommodation, Facilities, Storage	1.0	LS	150,656.12			\$ 150,656	\$ -	\$ -	\$ 150,656
	Engineering									
9.6	Design Engineering	1.00	LS		1,205,248.98		\$ -	\$ 1,205,249	\$ -	\$ 1,205,249
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		105,459.29		\$ -	\$ 105,459	\$ -	\$ 105,459
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		564,960.46		\$ -	\$ 564,960	\$ -	\$ 564,960
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		150,656.12		\$ -	\$ 150,656	\$ -	\$ 150,656
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		45,196.84		\$ -	\$ 45,197	\$ -	\$ 45,197
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.16	Real Estate (Acquisition)	-	LS			716,770.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	21,503.10	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 820,000	\$ -	\$ -	\$ 820,000	\$ 820,000
9.20	Sales Tax on Materials	8.80%	LS	14,841,721.32			\$ 1,306,071	\$ -	\$ -	\$ 1,306,071
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		24,620.97		\$ -	\$ 24,621	\$ -	\$ 24,621
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,456,728	\$ 3,188,784	\$ 904,124	\$ 5,549,635

Propel NY - TO51 AS5

7 - Existing Ruland 138 kV Upgrade & Interconnection

Total: \$9,339,029

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
7 - Existing Ruland 138 kV_ Upgrade & Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$128,372	\$144,027	\$80,858	\$353,257
2. SUBSTATION FOUNDATIONS	\$552,928	\$423,460	\$274,263	\$1,250,651
3. SUBSTATION STRUCTURES	\$160,564	\$121,039	\$114,383	\$395,986
4. MAJOR EQUIPTMENT	\$1,478,428	\$194,390	\$81,596	\$1,754,413
5. LOW VOLTAGE & CONTROL CABLE	\$101,712	\$27,504	\$5,501	\$134,717
6. CONDUIT & CABLE TRENCH	\$322,346	\$213,089	\$100,110	\$635,545
7. GROUND GRID	\$62,882	\$45,524	\$10,639	\$119,045
8. CONTROL ENCLOSURE	\$170,625	\$136,500	\$34,125	\$341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$311,900	\$1,073,391	\$225,205	\$1,610,496
SUBTOTAL (Costs):	\$3,289,756	\$2,378,925	\$926,678	\$6,595,359
CONTRACTOR MARK-UP (OH&P)	\$592,156	\$428,207	\$166,802	\$1,187,165
SUBTOTAL:	\$3,881,912	\$2,807,132	\$1,093,480	\$7,782,524
CONTINGENCY ON ENTIRE PROJECT	\$776,382	\$561,426	\$218,696	\$1,556,505
TOTAL:	\$4,658,294	\$3,368,558	\$1,312,176	\$9,339,029

Description of Work: Upgrades and Potential Interconnection Facilities to the existing LIPA Ruland Road Substation, located in the Hamlet of Melville, Town of Huntington, Suffolk County. Ruland Road Substation is an existing 138 kV AIS substation configured with six (6) BAAH bays. The Solution includes installing two (2) air core reactors in series to the 138 kV Lines 138-561 and 138-562, respectively, which are proposed as Upgrades and two (3) 138 kV circuit breakers, which are proposed as Potential Interconnection Facilities										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.6	ACRE	-	10,800.00	7,200.00	\$-	\$6,480	\$4,320	\$10,800
1.2	Demolition	1	LS	-	4,800.00	3,200.00	\$-	\$4,800	\$3,200	\$8,000
1.3	New Access Road - 20'	489	SY	4.85	7.20	4.80	\$2,371	\$3,520	\$2,347	\$8,238
1.4	Strip and Dispose Top Soil	968	CY		24.50	10.50	\$-	\$23,716	\$10,164	\$33,880
1.5	Site Grading- Excavation for Substation Pad	2,904	CY		9.00	6.00	\$-	\$26,136	\$17,424	\$43,560
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,568	CY		21.00	9.00	\$-	\$32,931.36	\$14,113.44	\$47,044.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,352	CY		2.40	1.60	\$-	\$5,645	\$3,764	\$9,409
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,568	CY	25.00	2.40	1.60	\$39,204	\$3,764	\$2,509	\$45,477
1.9	Blasting		EA				\$-	\$-	\$-	\$-
1.10	Install substation 8" pad base	2,904	SY	11.00	6.00	4.00	\$31,944	\$17,424	\$11,616	\$60,984
1.11	Site Surfacing - Aggregate 6" Thick	2,904	SY	16.50	4.50	3.00	\$47,916	\$13,068	\$8,712	\$69,696
1.12	7' Station Fence w/ Barbed Wire & Grounding	220	LF	13.85	13.85	6.92	\$3,047	\$3,047	\$1,523	\$7,616
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$-	\$-	\$-	\$-
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$-	\$-	\$-	\$-
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$-	\$-	\$-	\$-
1.16	Seeding	0	SF	1.50	1.50	1.00	\$-	\$-	\$-	\$-
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$1,265	\$1,659	\$378	\$3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$2,625	\$1,838	\$788	\$5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$-	\$-	\$-	\$-
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$-	\$-	\$-	\$-
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$-	\$-	\$-	\$-
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$128,372	\$144,027	\$80,858	\$353,257
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	\$ 116,803	\$ 133,489	\$ 83,430	\$ 333,722
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	\$ 102,429	\$ 117,062	\$ 73,164	\$ 292,655
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 552,928	\$ 423,460	\$ 274,263	\$ 1,250,651
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	-	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	\$ 85,800	\$ 51,480	\$ 68,640	\$ 205,920
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	126	LF	25.00	184.94	123.29	\$ 3,150	\$ 23,302	\$ 15,535	\$ 41,987
3.26	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	\$ 3,780	\$ 3,780	\$ 1,890	\$ 9,450

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 160,564	\$ 121,039	\$ 114,383	\$ 395,986
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	6	EA	10,000.00	7,970.08	3,415.75	\$ 60,000	\$ 47,821	\$ 20,495	\$ 128,315
4.24	138kV, Air core reactors (3 Ph)	6	EA	40,500.00	6,500.00	2,500.00	\$ 243,000	\$ 39,000	\$ 15,000	\$ 297,000
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,478,428	\$ 194,390	\$ 81,596	\$ 1,754,413

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	19,200	LF	5.30	1.43	0.29	\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 101,712	\$ 27,504	\$ 5,501	\$ 134,717
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,900	LF	11.15	10.80	5.40	\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	300	LF	266.50	53.04	13.26	\$ 79,950	\$ 15,912	\$ 3,978	\$ 99,840
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.9	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.12	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
TOTAL - CONDUIT & CABLE TRENCH							\$ 322,346	\$ 213,089	\$ 100,110	\$ 635,545
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,500	LF	2.09	3.42	1.46	\$ 13,592	\$ 22,199	\$ 9,514	\$ 45,305
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		\$ 29,040	\$ 13,200	\$ -	\$ 42,240
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	\$ 20,250	\$ 10,125	\$ 1,125	\$ 31,500
TOTAL - GROUND GRID							\$ 62,882	\$ 45,524	\$ 10,639	\$ 119,045
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
7 - Existing Ruland 138 kV_ Upgrade & Interconnection							\$ 2,977,856	\$ 1,305,534	\$ 701,473	\$ 4,984,863
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		70,245.26	30,105.11	\$ -	\$ 70,245	\$ 30,105	\$ 100,350
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		199,394.54		\$ -	\$ 199,395	\$ -	\$ 199,395
9.4	Utility PM and Project Oversight	1.0	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.5	Site Accommodation, Facilities, Storage	1.0	LS	49,848.63			\$ 49,849	\$ -	\$ -	\$ 49,849
	Engineering									
9.6	Design Engineering	1.00	LS		398,789.08		\$ -	\$ 398,789	\$ -	\$ 398,789
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		34,894.04		\$ -	\$ 34,894	\$ -	\$ 34,894
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		186,932.38		\$ -	\$ 186,932	\$ -	\$ 186,932
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		49,848.63		\$ -	\$ 49,849	\$ -	\$ 49,849
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		14,954.59		\$ -	\$ 14,955	\$ -	\$ 14,955
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-	51,052.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	1,531.56	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 186,000	\$ -	\$ -	\$ 186,000	\$ 186,000
9.20	Sales Tax on Materials	8.80%	LS	2,977,855.99			\$ 262,051	\$ -	\$ -	\$ 262,051
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,984.86		\$ -	\$ 4,985	\$ -	\$ 4,985
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 311,900	\$ 1,073,391	\$ 225,205	\$ 1,610,496

Propel NY - TO51 AS5

8 -Existing Shore Road 138 kV Interconnection

Total: \$ 11,923,278

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
8 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 581,223	\$ 386,312	\$ 254,245	\$ 1,221,780
3. SUBSTATION STRUCTURES	\$ 239,991	\$ 328,920	\$ 214,495	\$ 783,407
4. MAJOR EQUIPMENT	\$ 2,326,452	\$ 217,004	\$ 93,002	\$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE	\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
6. CONDUIT & CABLE TRENCH	\$ 348,046	\$ 218,596	\$ 97,101	\$ 663,742
7. GROUND GRID	\$ 27,450	\$ 18,156	\$ 3,495	\$ 49,101
8. CONTROL ENCLOSURE	\$ 343,281	\$ 352,625	\$ 120,656	\$ 816,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 419,013	\$ 1,351,818	\$ 255,389	\$ 2,026,220
SUBTOTAL (Costs):	\$ 4,453,917	\$ 2,918,984	\$ 1,047,493	\$ 8,420,394
CONTRACTOR MARK-UP (OH&P)	\$ 801,705	\$ 525,417	\$ 188,549	\$ 1,515,671
SUBTOTAL:	\$ 5,255,622	\$ 3,444,401	\$ 1,236,042	\$ 9,936,065
CONTINGENCY ON ENTIRE PROJECT	\$ 1,051,124	\$ 688,880	\$ 247,208	\$ 1,987,213
TOTAL:	\$ 6,306,746	\$ 4,133,281	\$ 1,483,251	\$ 11,923,278

Description of Work: Interconnection Facilities to the existing LIPA Shore Road Substation, located in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. Shore Road Substation is an existing 138 kV AIS substation with a main-tie main configuration. The Solution includes installing two (2) additional circuit breakers to create a six (6) position ring bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 -Existing Shore Road 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	18	CY	703.89	804.44	502.78	\$ 12,514	\$ 14,301	\$ 8,938	\$ 35,753
2.24	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.25	138kV, Bus support-1 Ph, low	77	CY	703.89	804.44	502.78	\$ 54,298	\$ 62,055	\$ 38,784	\$ 155,136
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	25.00	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	16	EA	18,000.00	3,200.00	2,800.00	\$ 288,000	\$ 51,200	\$ 44,800	\$ 384,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 581,223	\$ 386,312	\$ 254,245	\$ 1,221,780
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.16	138kV, Bus support-1 Ph, low	19	EA	2,782.00	1,919.84	1,279.89	\$ 52,858	\$ 36,477	\$ 24,318	\$ 113,653
3.17	138kV, Disconnect Switch	3	EA	5,694.00	3,928.86	2,619.24	\$ 17,082	\$ 11,787	\$ 7,858	\$ 36,726
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	957	LF	25.00	184.94	123.29	\$ 23,925	\$ 176,986	\$ 117,990	\$ 318,901
3.24	AL. Bus fittings	1	LS	28,710.00	28,710.00	14,355.00	\$ 28,710	\$ 28,710	\$ 14,355	\$ 71,775
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 239,991	\$ 328,920	\$ 214,495	\$ 783,407
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	4	EA	510,000.00	13,559.00	5,811.00	\$ 2,040,000	\$ 54,236	\$ 23,244	\$ 2,117,480
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	12	EA	10,000.00	7,970.08	3,415.75	\$ 120,000	\$ 95,641	\$ 40,989	\$ 256,630
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 2,326,452	\$ 217,004	\$ 93,002	\$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	31,800	LF	5.30	1.43	0.29	\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 168,461	\$ 45,554	\$ 9,111	\$ 223,125
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	6,450	LF	11.15	10.80	5.40	\$ 71,918	\$ 69,660	\$ 34,830	\$ 176,408
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	450	LF	266.50	53.04	13.26	\$ 119,925	\$ 23,868	\$ 5,967	\$ 149,760
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG- Conduit	225	LF	81.00	107.00	57.00	\$ 18,225	\$ 24,075	\$ 12,825	\$ 55,125
6.9	138kV UG- Cable	675	LF	156.00	94.00	62.00	\$ 105,300	\$ 63,450	\$ 41,850	\$ 210,600
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.11	Fiber Optic Cable	225	LF	7.40	3.33	2.22	\$ 1,664	\$ 749	\$ 500	\$ 2,913
6.12	Ground Continuity Conductor	225	LF	13.04	7.53	5.02	\$ 2,934	\$ 1,694	\$ 1,129	\$ 5,756
TOTAL - CONDUIT & CABLE TRENCH							\$ 348,046	\$ 218,596	\$ 97,101	\$ 663,742
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,224	LF	2.09	3.42	1.46	\$ 4,650	\$ 7,596	\$ 3,255	\$ 15,501
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		\$ 18,480	\$ 8,400	\$ -	\$ 26,880
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID		-					\$ 27,450	\$ 18,156	\$ 3,495	\$ 49,101
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.8	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 343,281	\$ 352,625	\$ 120,656	\$ 816,562
8 -Existing Shore Road 138 kV_ Interconnection							\$ 4,034,903	\$ 1,567,166	\$ 792,104	\$ 6,394,174
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		82,574.45	35,389.05	\$ -	\$ 82,574	\$ 35,389	\$ 117,964
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		255,766.94		\$ -	\$ 255,767	\$ -	\$ 255,767
9.4	Utility PM and Project Oversight	1.0	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.5	Site Accommodation, Facilities, Storage	1.0	LS	63,941.74			\$ 63,942	\$ -	\$ -	\$ 63,942
	Engineering									
9.6	Design Engineering	1.00	LS		511,533.89		\$ -	\$ 511,534	\$ -	\$ 511,534
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		-		\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	1.00	Site		44,759.22		\$ -	\$ 44,759	\$ -	\$ 44,759
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		239,781.51		\$ -	\$ 239,782	\$ -	\$ 239,782
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		63,941.74		\$ -	\$ 63,942	\$ -	\$ 63,942
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		19,182.52		\$ -	\$ 19,183	\$ -	\$ 19,183
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			242,657.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	7,279.71	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 220,000	\$ -	\$ -	\$ 220,000	\$ 220,000
9.20	Sales Tax on Materials	8.80%	LS	4,034,903.48			\$ 355,072	\$ -	\$ -	\$ 355,072
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,394.17		\$ -	\$ 6,394	\$ -	\$ 6,394
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 419,013	\$ 1,351,818	\$ 255,389	\$ 2,026,220

Propel NY - TO51 AS5

9 -Existing Holbrook 138 Kv Upgrade

Total: \$ 1,907,161

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
9 -Existing Holbrook 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220
SUBTOTAL (Costs):	\$ 830,227	\$ 415,860	\$ 100,777	\$ 1,346,865
CONTRACTOR MARK-UP (OH&P)	\$ 149,441	\$ 74,855	\$ 18,140	\$ 242,436
SUBTOTAL:	\$ 979,668	\$ 490,715	\$ 118,917	\$ 1,589,301
CONTINGENCY ON ENTIRE PROJECT	\$ 195,934	\$ 98,143	\$ 23,783	\$ 317,860
TOTAL:	\$ 1,175,602	\$ 588,858	\$ 142,701	\$ 1,907,161

Description of Work:The Applicants propose Upgrades to the Holbrook Substation, which is an existing LIPA 138 kV AIS substation, configured as an eight (8) position ring bus. The Holbrook Substation is located in the Hamlet of Holbrook in the Town of Brookhaven in Suffolk County.The 138 kV, 138-882 Line currently feeds two (2) 138 kV/69 kV transformers via an AIS disconnect before connecting into its bus section within the ring bus. The Solution involves replacing the existing switch #1322 with a new hybrid PASS GIS 138 kV breaker system with integrated disconnect and ground switches.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 -Existing Holbrook 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9 -Existing Holbrook 138 Kv_ Upgrade							\$ 753,760	\$ 202,826	\$ 57,059	\$ 1,013,645
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,095.98	3,898.28	\$ -	\$ 9,096	\$ 3,898	\$ 12,994
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		40,545.79		\$ -	\$ 40,546	\$ -	\$ 40,546
9.4	Utility PM and Project Oversight	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.5	Site Accommodation, Facilities, Storage	1.0	LS	10,136.45			\$ 10,136	\$ -	\$ -	\$ 10,136
	Engineering									
9.6	Design Engineering	1.00	LS		81,091.59		\$ -	\$ 81,092	\$ -	\$ 81,092
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		7,095.51		\$ -	\$ 7,096	\$ -	\$ 7,096
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		38,011.68		\$ -	\$ 38,012	\$ -	\$ 38,012
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,040.93		\$ -	\$ 3,041	\$ -	\$ 3,041
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 38,000	\$ -	\$ -	\$ 38,000	\$ 38,000
9.20	Sales Tax on Materials	8.80%	LS	753,759.78			\$ 66,331	\$ -	\$ -	\$ 66,331
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,013.64		\$ -	\$ 1,014	\$ -	\$ 1,014
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220

Propel NY - TO51 AS5

10 -Existing Newbridge 138 Kv Upgrade

Total: \$ 4,643,995

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
10 -Existing Newbridge 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS	\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867
SUBTOTAL (Costs):	\$ 2,420,697	\$ 677,764	\$ 181,196	\$ 3,279,658
CONTRACTOR MARK-UP (OH&P)	\$ 435,726	\$ 121,998	\$ 32,615	\$ 590,338
SUBTOTAL:	\$ 2,856,423	\$ 799,762	\$ 213,811	\$ 3,869,996
CONTINGENCY ON ENTIRE PROJECT	\$ 571,285	\$ 159,952	\$ 42,762	\$ 773,999
TOTAL:	\$ 3,427,707	\$ 959,714	\$ 256,574	\$ 4,643,995

Description of Work: Upgrades to the existing LIPA 138 kV Newbridge Substation, located in the Town of Hempstead, Nassau County. Newbridge Substation is an existing 138 kV AIS substation with a six (6) bay BAAH configuration and 138 kV/69 kV transformers connected to each main bus. The Solution includes the addition of a new breaker in series with the existing 138 kV CB -1460, providing an additional contingency to the 138 kV Lines 138-465 and 138-461

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10 -Existing Newbridge 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 222,257	\$ 45,551	\$ 38,069	\$ 305,876
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	920,000.00	13,559.00	5,811.00	\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,840,000	\$ 27,118	\$ 11,622	\$ 1,878,740

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
10 -Existing Newbridge 138 Kv_ Upgrade							\$ 2,202,270	\$ 177,052	\$ 83,468	\$ 2,462,790
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,118.21	3,907.81	\$ -	\$ 9,118	\$ 3,908	\$ 13,026
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		98,511.60		\$ -	\$ 98,512	\$ -	\$ 98,512
9.4	Utility PM and Project Oversight	1.0	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.5	Site Accommodation, Facilities, Storage	1.0	LS	24,627.90			\$ 24,628	\$ -	\$ -	\$ 24,628
	Engineering									
9.6	Design Engineering	1.00	LS		197,023.21		\$ -	\$ 197,023	\$ -	\$ 197,023
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		17,239.53		\$ -	\$ 17,240	\$ -	\$ 17,240
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		92,354.63		\$ -	\$ 92,355	\$ -	\$ 92,355
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		24,627.90		\$ -	\$ 24,628	\$ -	\$ 24,628
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		7,388.37		\$ -	\$ 7,388	\$ -	\$ 7,388
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 92,000	\$ -	\$ -	\$ 92,000	\$ 92,000
9.20	Sales Tax on Materials	8.80%	LS	2,202,269.72			\$ 193,800	\$ -	\$ -	\$ 193,800
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,462.79		\$ -	\$ 2,463	\$ -	\$ 2,463

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 218,428	\$ 500,712	\$ 97,728	\$ 816,867

Propel NY - TO51 AS5

11 - Existing EGC 138 kV Upgrade

Total: \$ 17,743,027

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
11 - Existing EGC 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS	\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670
3. SUBSTATION STRUCTURES	\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843
4. MAJOR EQUIPMENT	\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458
7. GROUND GRID	\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944
SUBTOTAL (Costs):	\$ 4,951,528	\$ 5,301,753	\$ 2,277,106	\$ 12,530,386
CONTRACTOR MARK-UP (OH&P)	\$ 891,275	\$ 954,316	\$ 409,879	\$ 2,255,470
SUBTOTAL:	\$ 5,842,803	\$ 6,256,069	\$ 2,686,985	\$ 14,785,856
CONTINGENCY ON ENTIRE PROJECT	\$ 1,168,561	\$ 1,251,214	\$ 537,397	\$ 2,957,171
TOTAL:	\$ 7,011,363	\$ 7,507,282	\$ 3,224,381	\$ 17,743,027

Description of Work: Upgrades to the existing LIPA East Garden City Substation, Hamlet of Uniondale, Town of Hempstead, Nassau County. The LIPA East Garden City Substation is an existing 138 kV AIS substation with a ten (10) position ring bus configuration.The Solution includes the installation of three (3) air core reactors with by-pass circuit, in series, to the 138 kV lines 138-462,138-465, and 138-463, respectively. Due to current site constraints, the new series reactors will be installed in the property adjacent to the existing station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11 - Existing EGC 138 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000
1.3	New Access Road - 20'	2,051	SY	4.85	7.20	4.80	\$ 9,945	\$ 14,764	\$ 9,843	\$ 34,552
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	6,423	CY		9.00	6.00	\$ -	\$ 57,811	\$ 38,540	\$ 96,351
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	867	CY		21.00	9.00	\$ -	\$ 18,210	\$ 7,804	\$ 26,015
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,804	CY		2.40	1.60	\$ -	\$ 18,731	\$ 12,487	\$ 31,218
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	867	CY	25.00	2.40	1.60	\$ 21,679	\$ 2,081	\$ 1,387	\$ 25,148
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,217	LF	13.85	13.85	6.92	\$ 16,853	\$ 16,853	\$ 8,427	\$ 42,133
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	75,203.20	57,600.00	27,180.00	\$ 75,203	\$ 57,600	\$ 27,180	\$ 159,983
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	1,826	LF	2.41	3.16	0.72	\$ 4,399	\$ 5,769	\$ 1,314	\$ 11,482
1.18	Temporary fencing	1,217	LF	7.50	5.25	2.25	\$ 9,128	\$ 6,389	\$ 2,738	\$ 18,255
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	408	LF	156.00	117.00	117.00	\$ 63,648	\$ 47,736	\$ 47,736	\$ 159,120
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.29	138kV, Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	249	CY	703.89	804.44	502.78	\$ 175,204	\$ 200,233	\$ 125,146	\$ 500,583
2.30	138kV, Surge arrester	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	3	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	6	EA	21,450.00	12,870.00	17,160.00	\$ 128,700	\$ 77,220	\$ 102,960	\$ 308,880
3.23	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.26	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	27	EA	4,446.00	1,050.00	450.00	\$ 120,042	\$ 28,350	\$ 12,150	\$ 160,542
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	9	EA	46,833.00	6,500.00	2,500.00	\$ 421,497	\$ 58,500	\$ 22,500	\$ 502,497
4.26	138kV, Surge arrester	18	EA	4,446.00	4,200.00	1,800.00	\$ 80,028	\$ 75,600	\$ 32,400	\$ 188,028
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	850	LF	266.50	53.04	13.26	\$ 226,525	\$ 45,084	\$ 11,271	\$ 282,880
6.7	345kV UG- Conduit		LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	\$ -	\$ -	\$ -	\$ -
6.9	345kV UG- Termination		EA				\$ -	\$ -	\$ -	\$ -
6.10	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	\$ 299,700	\$ 395,900	\$ 210,900	\$ 906,500
6.11	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	\$ 1,731,600	\$ 1,043,400	\$ 688,200	\$ 3,463,200
6.12	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.13	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	\$ 27,369	\$ 12,323	\$ 8,215	\$ 47,908
6.14	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	\$ 48,244	\$ 27,850	\$ 18,567	\$ 94,661
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	9,350	LF	2.09	3.42	1.46	\$ 19,551	\$ 31,933	\$ 13,686	\$ 65,170
7.2	Caweld, DSA, 4/0 , T, CROSS	252	EA	165.00	75.00		\$ 41,580	\$ 18,900	\$ -	\$ 60,480
7.3	Ground Rod, 3/4" x 15'	221	EA	135.00	67.50	7.50	\$ 29,835	\$ 14,918	\$ 1,658	\$ 46,410
TOTAL - GROUND GRID							\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	356,309.62	249,416.73	106,892.89	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
11 - Existing EGC 138 kV_ Upgrade							\$ 4,463,312	\$ 3,223,882	\$ 1,857,249	\$ 9,544,442
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		177,839.56	76,216.96	\$ -	\$ 177,840	\$ 76,217	\$ 254,057
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		381,777.69		\$ -	\$ 381,778	\$ -	\$ 381,778
9.4	Utility PM and Project Oversight	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.5	Site Accommodation, Facilities, Storage	1.0	LS	95,444.42			\$ 95,444	\$ -	\$ -	\$ 95,444
	Engineering									
9.6	Design Engineering	1.00	LS		763,555.37		\$ -	\$ 763,555	\$ -	\$ 763,555
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		66,811.10		\$ -	\$ 66,811	\$ -	\$ 66,811
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		357,916.58		\$ -	\$ 357,917	\$ -	\$ 357,917
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		28,633.33		\$ -	\$ 28,633	\$ -	\$ 28,633
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 340,000	\$ -	\$ -	\$ 340,000	\$ 340,000
9.20	Sales Tax on Materials	8.80%	LS	4,463,311.81			\$ 392,771	\$ -	\$ -	\$ 392,771
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,544.44		\$ -	\$ 9,544	\$ -	\$ 9,544
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944

Propel NY - TO51 AS5

12 - Existing Rainey 345 kV Upgrade

Total: \$ 9,824,483

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS	\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879
SUBTOTAL (Costs):	\$ 4,800,582	\$ 1,658,463	\$ 479,150	\$ 6,938,195
CONTRACTOR MARK-UP (OH&P)	\$ 864,105	\$ 298,523	\$ 86,247	\$ 1,248,875
SUBTOTAL:	\$ 5,664,686	\$ 1,956,986	\$ 565,397	\$ 8,187,070
CONTINGENCY ON ENTIRE PROJECT	\$ 1,132,937	\$ 391,397	\$ 113,079	\$ 1,637,414
TOTAL:	\$ 6,797,623	\$ 2,348,384	\$ 678,476	\$ 9,824,483

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of two new breakers in series with the existing 345 kV CB -1E and CB-6E respectively, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Existing Rainey 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	90,000.00	60,000.00	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	40,089.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	6	EA	18,000.00	3,200.00	2,800.00	\$ 108,000	\$ 19,200	\$ 16,800	\$ 144,000
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 164,311	\$ 83,555	\$ 57,022	\$ 304,888
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	4	EA	980,000.00	57,239.00	24,531.00	\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,920,000	\$ 228,956	\$ 98,124	\$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 82,641	\$ 22,347	\$ 4,469	\$ 109,457
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 26,760	\$ 25,920	\$ 12,960	\$ 65,640
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
12 - Existing Rainey 345 kV_ Upgrade							\$ 4,364,337	\$ 587,278	\$ 266,700	\$ 5,218,315
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		29,889.25	12,809.68	\$ -	\$ 29,889	\$ 12,810	\$ 42,699
	Project Management, Material Handling & Amenities									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		208,732.61		\$ -	\$ 208,733	\$ -	\$ 208,733
9.4	Utility PM and Project Oversight	1.0	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.5	Site Accommodation, Facilities, Storage	1.0	LS	52,183.15			\$ 52,183	\$ -	\$ -	\$ 52,183
	Engineering									
9.6	Design Engineering	1.00	LS		417,465.22		\$ -	\$ 417,465	\$ -	\$ 417,465
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		36,528.21		\$ -	\$ 36,528	\$ -	\$ 36,528
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		195,686.82		\$ -	\$ 195,687	\$ -	\$ 195,687
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		52,183.15		\$ -	\$ 52,183	\$ -	\$ 52,183
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
0	Warranties / LOC's	1.00	LS		15,654.95		\$ -	\$ 15,655	\$ -	\$ 15,655
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 196,000	\$ -	\$ -	\$ 196,000	\$ 196,000
9.20	Sales Tax on Materials	8.80%	LS	4,364,336.72			\$ 384,062	\$ -	\$ -	\$ 384,062
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,218.32		\$ -	\$ 5,218	\$ -	\$ 5,218
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 436,245	\$ 1,071,185	\$ 212,450	\$ 1,719,879

Propel NY - TO51 AS5

13 - Existing EGC 345 kV Upgrade

Total: \$ 161,831,509

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
13 - Existing EGC 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 691,550	\$ 928,374	\$ 609,480	\$ 2,229,404
2. SUBSTATION FOUNDATIONS	\$ 3,009,479	\$ 3,185,817	\$ 1,961,321	\$ 8,156,617
3. SUBSTATION STRUCTURES	\$ 1,291,407	\$ 1,245,902	\$ 818,317	\$ 3,355,626
4. MAJOR EQUIPTMENT	\$ 37,521,801	\$ 3,233,597	\$ 1,433,416	\$ 42,188,813
5. LOW VOLTAGE & CONTROL CABLE	\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
6. CONDUIT & CABLE TRENCH	\$ 2,508,334	\$ 1,336,900	\$ 783,414	\$ 4,628,648
7. GROUND GRID	\$ 212,150	\$ 153,307	\$ 35,810	\$ 401,267
8. CONTROL ENCLOSURE	\$ 1,514,278	\$ 1,228,091	\$ 405,187	\$ 3,147,556
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,800,849	\$ 13,477,410	\$ 31,301,689	\$ 49,579,948
SUBTOTAL (Costs):	\$ 52,002,783	\$ 24,911,878	\$ 37,373,128	\$ 114,287,789
CONTRACTOR MARK-UP (OH&P)	\$ 9,360,501	\$ 4,484,138	\$ 6,727,163	\$ 20,571,802
SUBTOTAL:	\$ 61,363,284	\$ 29,396,016	\$ 44,100,291	\$ 134,859,591
CONTINGENCY ON ENTIRE PROJECT	\$ 12,272,657	\$ 5,879,203	\$ 8,820,058	\$ 26,971,918
TOTAL:	\$ 73,635,941	\$ 35,275,219	\$ 52,920,349	\$ 161,831,509

Description of Work: Upgrade to the 345 kV East Garden City Substation, to be located at 555 Stewart Avenue, Hamlet of Uniondale, Town of Hempstead, Nassau County. The New 345 kV East Garden City Substation will be connected by four (4) new 345 kV underground transmission lines and the existing Y-49 Line. Also, it will serve the two (2) existing 345 kV/138 kV transformers located in the existing LIPA 138 kV East Garden City Substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 - Existing EGC 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	\$ -	\$ 8,640	\$ 5,760	\$ 14,400
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	9,087	SY	4.85	7.20	4.80	\$ 44,071	\$ 65,425	\$ 43,617	\$ 153,112
1.4	Strip and Dispose Top Soil	1,291	CY		24.50	10.50	\$ -	\$ 31,621	\$ 13,552	\$ 45,173
1.5	Site Grading- Excavation for Substation Pad	17,446	CY		9.00	6.00	\$ -	\$ 157,018	\$ 104,679	\$ 261,697
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,355	CY		21.00	9.00	\$ -	\$ 49,460.67	\$ 21,197.43	\$ 70,658.10
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	21,197	CY		2.40	1.60	\$ -	\$ 50,874	\$ 33,916	\$ 84,790
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,355	CY	25.00	2.40	1.60	\$ 58,882	\$ 5,653	\$ 3,768	\$ 68,303
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	26,170	SY	-	6.00	4.00	\$ -	\$ 157,019	\$ 104,679	\$ 261,698
1.11	Site Surfacing - Aggregate 6" Thick	26,170	SY	8.25	4.50	3.00	\$ 215,901	\$ 117,764	\$ 78,509	\$ 412,174
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,298	LF	13.85	13.85	6.92	\$ 17,975	\$ 17,975	\$ 8,987	\$ 44,937
1.13	30' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	149,169.60	96,000.00	45,300.00	\$ 149,170	\$ 96,000	\$ 45,300	\$ 290,470
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,025	LF	2.41	3.16	0.72	\$ 4,880	\$ 6,399	\$ 1,458	\$ 12,737
1.18	Temporary fencing	1,350	LF	7.50	5.25	2.25	\$ 10,125	\$ 7,088	\$ 3,038	\$ 20,250
1.19	Substation entrance with asphalt	778	SY	19.50	26.00	19.50	\$ 15,167	\$ 20,222	\$ 15,167	\$ 50,556
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	965	LF	156.00	117.00	117.00	\$ 150,540	\$ 112,905	\$ 112,905	\$ 376,350
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 691,550	\$ 928,374	\$ 609,480	\$ 2,229,404
2. SUBSTATION FOUNDATIONS										
2.1	345kv, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'-one bay	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.3	345kV, A Frame 70'-two bay	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.4	345kV, Bus support-3 Ph	380	CY	703.89	804.44	502.78	\$ 267,589	\$ 305,816	\$ 191,135	\$ 764,540
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	523	CY	703.89	804.44	502.78	\$ 367,935	\$ 420,497	\$ 262,811	\$ 1,051,242
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	106	CY	703.89	804.44	502.78	\$ 74,330	\$ 84,949	\$ 53,093	\$ 212,372
2.14	345kV, CCVT	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.15	345kV, Disconnect Switch	190	CY	703.89	804.44	502.78	\$ 133,794	\$ 152,908	\$ 95,567	\$ 382,270
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.18	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.21	345kV, Circuit Breaker (PASS)	260	CY	703.89	804.44	502.78	\$ 183,010	\$ 209,154	\$ 130,722	\$ 522,886
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	232	CY	703.89	804.44	502.78	\$ 163,301	\$ 186,630	\$ 116,644	\$ 466,575
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'		EA							
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	\$ 354,699	\$ 151,783	\$ 65,050	\$ 571,532
TOTAL - 345KV FOUNDATION							\$ 3,009,479	\$ 3,185,817	\$ 1,961,321	\$ 8,156,617
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	3	EA	48,100.00	28,860.00	19,240.00	\$ 144,300	\$ 86,580	\$ 57,720	\$ 288,600
3.3	345kV, A Frame 70'-two bay	2	EA	86,580.00	51,948.00	34,632.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
3.3	345kV, Bus support-3 Ph	24	EA	8,346.00	5,758.74	3,839.16	\$ 200,304	\$ 138,210	\$ 92,140	\$ 430,654
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	66	EA	4,810.00	2,886.00	1,924.00	\$ 317,460	\$ 190,476	\$ 126,984	\$ 634,920
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	8	EA	8,346.00	5,758.74	3,839.16	\$ 66,768	\$ 46,070	\$ 30,713	\$ 143,551
3.13	345kV, CCVT	24	EA	4,810.00	2,886.00	1,924.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.14	345kV, Disconnect Switch	6	EA	19,240.00	11,544.00	7,696.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	2,457	LF	25.00	184.94	123.29	\$ 61,425	\$ 454,393	\$ 302,928	\$ 818,746
3.26	AL. Bus fittings	1	LS	73,710.00	73,710.00	36,855.00	\$ 73,710	\$ 73,710	\$ 36,855	\$ 184,275

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,291,407	\$ 1,245,902	\$ 818,317	\$ 3,355,626
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	24	EA	27,144.00	5,460.00	2,340.00	\$ 651,456	\$ 131,040	\$ 56,160	\$ 838,656
4.6	345kV, CCVT	24	EA	16,900.00	15,941.99	6,832.28	\$ 405,600	\$ 382,608	\$ 163,975	\$ 952,182
4.7	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	\$ 346,320	\$ 207,792	\$ 138,528	\$ 692,640
4.8	345/138kV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	1	EA	3,633,158.00	3,520.00	880.00	\$ 3,633,158	\$ 3,520	\$ 880	\$ 3,637,558
4.11	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	2	EA		410,025.00	175,725.00	\$ -	\$ 820,050	\$ 351,450	\$ 1,171,500
4.14	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- PAR	1	EA		715,400.00	306,600.00	\$ -	\$ 715,400	\$ 306,600	\$ 1,022,000
4.15	345kV, Circuit Breaker (PASS)	13	EA	980,000.00	57,239.00	24,531.00	\$ 12,740,000	\$ 744,107	\$ 318,903	\$ 13,803,010
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	24	EA	8,450.00	5,460.00	2,340.00	\$ 202,800	\$ 131,040	\$ 56,160	\$ 390,000
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.27	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 37,521,801	\$ 3,233,597	\$ 1,433,416	\$ 42,188,813
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	85,500	LF	5.30	1.43	0.29	\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 452,936	\$ 122,479	\$ 24,496	\$ 599,911
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	16,200	LF	11.15	10.80	5.40	\$ 180,630	\$ 174,960	\$ 87,480	\$ 443,070
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	875	LF	266.50	53.04	13.26	\$ 233,188	\$ 46,410	\$ 11,603	\$ 291,200
6.7	345kV UG- Conduit	1,800	LF	230.08	133.40	55.96	\$ 414,140	\$ 240,122	\$ 100,726	\$ 754,988
6.8	345kV UG- Cable	6,600	LF	175.00	105.00	70.00	\$ 1,155,000	\$ 693,000	\$ 462,000	\$ 2,310,000
6.9	345kV UG- Termination	18	EA	27,144.00	9,048.00	6,032.00	\$ 488,592	\$ 162,864	\$ 108,576	\$ 760,032
6.10	Fiber Optic Cable	1,800	LF	7.40	3.33	2.22	\$ 13,315	\$ 5,995	\$ 3,997	\$ 23,306
6.11	Ground Continuity Conductor	1,800	LF	13.04	7.53	5.02	\$ 23,470	\$ 13,549	\$ 9,032	\$ 46,051
6.12	138kV UG- Conduit	0	LF				\$ -	\$ -	\$ -	\$ -
6.13	138kV UG- Cable	0	LF				\$ -	\$ -	\$ -	\$ -
6.14	138kV UG- Termination	0	EA							
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,508,334	\$ 1,336,900	\$ 783,414	\$ 4,628,648
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,760	LF	2.09	3.42	1.46	\$ 45,500	\$ 74,317	\$ 31,850	\$ 151,667
7.2	Caweld, DSA, 4/0 , T, CROSS	578	EA	165.00	75.00		\$ 95,370	\$ 43,350	\$ -	\$ 138,720
7.3	Ground Rod, 3/4" x 15'	528	EA	135.00	67.50	7.50	\$ 71,280	\$ 35,640	\$ 3,960	\$ 110,880
TOTAL - GROUND GRID							\$ 212,150	\$ 153,307	\$ 35,810	\$ 401,267
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	356,309.62	249,416.73	106,892.89	\$ 356,310	\$ 249,417	\$ 106,893	\$ 712,619
8.2	Primary Line Relays (Pilot): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.3	Backup Line Relays (Pilot): GE L90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.4	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.5	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator,	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,514,278	\$ 1,228,091	\$ 405,187	\$ 3,147,556
13 - Existing EGC 345 kV_ Upgrade							\$ 47,201,935	\$ 11,434,467	\$ 6,071,439	\$ 64,707,842
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		612,706.74	262,588.60	\$ -	\$ 612,707	\$ 262,589	\$ 875,295
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,588,313.67		\$ -	\$ 2,588,314	\$ -	\$ 2,588,314
9.4	Utility PM and Project Oversight	1.0	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.5	Site Accommodation, Facilities, Storage	1.0	LS	647,078.42			\$ 647,078	\$ -	\$ -	\$ 647,078
	Engineering									
9.6	Design Engineering	1.00	LS		5,176,627.33		\$ -	\$ 5,176,627	\$ -	\$ 5,176,627
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		452,954.89		\$ -	\$ 452,955	\$ -	\$ 452,955
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,426,544.06		\$ -	\$ 2,426,544	\$ -	\$ 2,426,544
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		647,078.42		\$ -	\$ 647,078	\$ -	\$ 647,078
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		194,123.52		\$ -	\$ 194,124	\$ -	\$ 194,124
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			27,000,000.00	\$ -	\$ -	\$ 27,000,000	\$ 27,000,000
9.17	Legal Fees (Real estate)	1.00	LS		-	810,000.00	\$ -	\$ -	\$ 810,000	\$ 810,000
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,220,000	\$ -	\$ -	\$ 3,220,000	\$ 3,220,000
9.20	Sales Tax on Materials	8.80%	LS	47,201,934.73			\$ 4,153,770	\$ -	\$ -	\$ 4,153,770
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		64,707.84		\$ -	\$ 64,708	\$ -	\$ 64,708
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,800,849	\$ 13,477,410	\$ 31,301,689	\$ 49,579,948

Propel NY - TO51 AS5

14 -Existing Syosset 138 kV Interconnection

Total: \$ 23,416,431

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
14 -Existing Syosset 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES	\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPTMENT	\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID	\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015
SUBTOTAL (Costs):	\$ 12,068,481	\$ 3,441,070	\$ 1,027,476	\$ 16,537,028
CONTRACTOR MARK-UP (OH&P)	\$ 2,172,327	\$ 619,393	\$ 184,946	\$ 2,976,665
SUBTOTAL:	\$ 14,240,808	\$ 4,060,463	\$ 1,212,422	\$ 19,513,693
CONTINGENCY ON ENTIRE PROJECT	\$ 2,848,162	\$ 812,093	\$ 242,484	\$ 3,902,739
TOTAL:	\$ 17,088,969	\$ 4,872,555	\$ 1,454,907	\$ 23,416,431

Description of Work: Interconnection Facilities to the existing LIPA Syosset Substation, located in the Hamlet of Syosset, Town of Oyster Bay, Nassau County. Syosset Substation is a 138 kV AIS substation with an eight (8) ring bus configuration. The Solution includes the installation of a new underground 138 kV line with a PAR in an existing spare line position.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 -Existing Syosset 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.20	138kV, Surge arrester	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	81	LF	25.00	184.94	123.29	\$ 2,025	\$ 14,980	\$ 9,987	\$ 26,992

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.26	AL. Bus fittings	1	LS	2,430.00	2,430.00	1,215.00	\$ 2,430	\$ 2,430	\$ 1,215	\$ 6,075
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,087,382.00	3,520.00	880.00	\$ 10,087,382	\$ 3,520	\$ 880	\$ 10,091,782
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.23	138kV, CCVT	3	EA	10,000.00	7,970.08	3,415.75	\$ 30,000	\$ 23,910	\$ 10,247	\$ 64,158
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	792	LF	2.09	3.42	1.46	\$ 1,656	\$ 2,705	\$ 1,159	\$ 5,520
7.2	Caweld, DSA, 4/0 , T, CROSS	41	EA	165.00	75.00		\$ 6,765	\$ 3,075	\$ -	\$ 9,840
7.3	Ground Rod, 3/4" x 15'	12	EA	135.00	67.50	7.50	\$ 1,620	\$ 810	\$ 90	\$ 2,520
TOTAL - GROUND GRID		-					\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (Pilot): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
14 -Existing Syosset 138 kV_ Interconnection							\$ 10,978,337	\$ 908,544	\$ 518,131	\$ 12,405,013
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		49,933.65	21,400.14	\$ -	\$ 49,934	\$ 21,400	\$ 71,334
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		496,200.52		\$ -	\$ 496,201	\$ -	\$ 496,201
9.4	Utility PM and Project Oversight	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.5	Site Accommodation, Facilities, Storage	1.0	LS	124,050.13			\$ 124,050	\$ -	\$ -	\$ 124,050
	Engineering									
9.6	Design Engineering	1.00	LS		992,401.04		\$ -	\$ 992,401	\$ -	\$ 992,401
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		86,835.09		\$ -	\$ 86,835	\$ -	\$ 86,835
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		465,187.99		\$ -	\$ 465,188	\$ -	\$ 465,188
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		37,215.04		\$ -	\$ 37,215	\$ -	\$ 37,215
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			18,296.00	\$ -	\$ -	\$ 18,296	\$ 18,296
9.17	Legal Fees (Real estate)	1.00	LS		-	548.88	\$ -	\$ -	\$ 549	\$ 549
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 460,000	\$ -	\$ -	\$ 460,000	\$ 460,000
9.20	Sales Tax on Materials	8.80%	LS	10,978,337.32			\$ 966,094	\$ -	\$ -	\$ 966,094
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,405.01		\$ -	\$ 12,405	\$ -	\$ 12,405
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015

Propel NY - TO51 AS5

15 - Existing Northport 138 Kv Upgrade

Total: \$ 33,462,730

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
15 - Existing Northport 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS	\$ 1,159,472	\$ 491,282	\$ 345,452	\$ 1,996,206
3. SUBSTATION STRUCTURES	\$ 229,721	\$ 168,345	\$ 98,884	\$ 496,949
4. MAJOR EQUIPMENT	\$ 11,364,886	\$ 536,099	\$ 316,271	\$ 12,217,256
5. LOW VOLTAGE & CONTROL CABLE	\$ 90,587	\$ 24,496	\$ 4,899	\$ 119,982
6. CONDUIT & CABLE TRENCH	\$ 1,198,019	\$ 895,158	\$ 472,688	\$ 2,565,865
7. GROUND GRID	\$ 10,729	\$ 6,948	\$ 1,296	\$ 18,972
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,424,873	\$ 3,645,459	\$ 870,372	\$ 5,940,704
SUBTOTAL (Costs):	\$ 15,606,256	\$ 5,882,162	\$ 2,143,455	\$ 23,631,872
CONTRACTOR MARK-UP (OH&P)	\$ 2,809,126	\$ 1,058,789	\$ 385,822	\$ 4,253,737
SUBTOTAL:	\$ 18,415,382	\$ 6,940,951	\$ 2,529,276	\$ 27,885,609
CONTINGENCY ON ENTIRE PROJECT	\$ 3,683,076	\$ 1,388,190	\$ 505,855	\$ 5,577,122
TOTAL:	\$ 22,098,458	\$ 8,329,141	\$ 3,035,132	\$ 33,462,730

Description of Work: Upgrades to the existing LIPA 138 kV Northport Substation, located in the Village of Northport in the Town of Huntington, Suffolk County. Northport Substation is an existing 138 kV AIS substation with a main-tie main configuration.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
15 - Existing Northport 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	13	CY	703.89	804.44	502.78	\$ 9,385	\$ 10,726	\$ 6,704	\$ 26,815
2.24	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	97	CY	703.89	804.44	502.78	\$ 68,249	\$ 77,999	\$ 48,749	\$ 194,996
2.27	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	48	EA	18,000.00	3,200.00	2,800.00	\$ 864,000	\$ 153,600	\$ 134,400	\$ 1,152,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,159,472	\$ 491,282	\$ 345,452	\$ 1,996,206
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	\$ 16,692	\$ 11,519	\$ 7,679	\$ 35,890
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	4	EA	5,694.00	3,928.86	2,619.24	\$ 22,776	\$ 15,715	\$ 10,477	\$ 48,968
3.18	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	260	LF	25.00	184.94	123.29	\$ 6,500	\$ 48,084	\$ 32,056	\$ 86,640

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	AL. Bus fittings	1	LS	7,800.00	7,800.00	3,900.00	\$ 7,800	\$ 7,800	\$ 3,900	\$ 19,500
3.25	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 229,721	\$ 168,345	\$ 98,884	\$ 496,949
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,087,382.00	3,520.00	880.00	\$ 10,087,382	\$ 3,520	\$ 880	\$ 10,091,782
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		381,400.00	250,600.00	\$ -	\$ 381,400	\$ 250,600	\$ 632,000
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Circuit Breaker (PASS)- Exisitng Relocation (CB1460)	1	EA		13,559.00	5,811.00	\$ -	\$ 13,559	\$ 5,811	\$ 19,370
4.22	138kV, Disconnect Switch	4	EA	37,700.00	11,875.50	5,089.50	\$ 150,800	\$ 47,502	\$ 20,358	\$ 218,660
4.23	138kV, Cable sealing end	12	EA	4,446.00	1,050.00	450.00	\$ 53,352	\$ 12,600	\$ 5,400	\$ 71,352
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.26	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 11,364,886	\$ 536,099	\$ 316,271	\$ 12,217,256

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	17,100	LF	5.30	1.43	0.29	\$ 90,587	\$ 24,496	\$ 4,899	\$ 119,982
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 90,587	\$ 24,496	\$ 4,899	\$ 119,982
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,000	LF	11.15	10.80	5.40	\$ 33,450	\$ 32,400	\$ 16,200	\$ 82,050
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	3,750	LF	3.95	10.80	5.40	\$ 14,813	\$ 40,500	\$ 20,250	\$ 75,563
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	138kV UG- Conduit	1,000	LF	81.00	107.00	57.00	\$ 81,000	\$ 107,000	\$ 57,000	\$ 245,000
6.8	138kV UG- Cable	6,000	LF	156.00	94.00	62.00	\$ 936,000	\$ 564,000	\$ 372,000	\$ 1,872,000
6.9	138kV UG- Termination	12	EA	9,360.00	11,700.00		\$ 112,320	\$ 140,400	\$ -	\$ 252,720
6.10	Fiber Optic Cable	1,000	LF	7.40	3.33	2.22	\$ 7,397	\$ 3,331	\$ 2,220	\$ 12,948
6.11	Ground Continuity Conductor	1,000	LF	13.04	7.53	5.02	\$ 13,039	\$ 7,527	\$ 5,018	\$ 25,584
6.12							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,198,019	\$ 895,158	\$ 472,688	\$ 2,565,865
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	798	LF	2.09	3.42	1.46	\$ 1,669	\$ 2,725	\$ 1,168	\$ 5,562
7.2	Caweld, DSA, 4/0 , T, CROSS	41	EA	165.00	75.00		\$ 6,765	\$ 3,075	\$ -	\$ 9,840
7.3	Ground Rod, 3/4" x 15'	17	EA	135.00	67.50	7.50	\$ 2,295	\$ 1,148	\$ 128	\$ 3,570
TOTAL - GROUND GRID		-					\$ 10,729	\$ 6,948	\$ 1,296	\$ 18,972
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
15 - Existing Northport 138 Kv_ Upgrade							\$ 14,181,382	\$ 2,236,702	\$ 1,273,083	\$ 17,691,168
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		122,842.48	52,646.78	\$ -	\$ 122,842	\$ 52,647	\$ 175,489
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		176,911.68		\$ -	\$ 176,912	\$ -	\$ 176,912
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		707,646.70		\$ -	\$ 707,647	\$ -	\$ 707,647
9.4	Utility PM and Project Oversight	1.0	LS		176,911.68		\$ -	\$ 176,912	\$ -	\$ 176,912
9.5	Site Accommodation, Facilities, Storage	1.0	LS	176,911.68			\$ 176,912	\$ -	\$ -	\$ 176,912
	Engineering									
9.6	Design Engineering	1.00	LS		1,415,293.40		\$ -	\$ 1,415,293	\$ -	\$ 1,415,293
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		123,838.17		\$ -	\$ 123,838	\$ -	\$ 123,838
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		663,418.78		\$ -	\$ 663,419	\$ -	\$ 663,419
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		176,911.68		\$ -	\$ 176,912	\$ -	\$ 176,912
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		53,073.50		\$ -	\$ 53,074	\$ -	\$ 53,074
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			146,063.00	\$ -	\$ -	\$ 146,063	\$ 146,063
9.17	Legal Fees (Real estate)	1.00	LS		-	4,381.89	\$ -	\$ -	\$ 4,382	\$ 4,382
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.19	Bonds	1	LS		-	\$ 660,000	\$ -	\$ -	\$ 660,000	\$ 660,000
9.20	Sales Tax on Materials	8.80%	LS	14,181,382.27			\$ 1,247,962	\$ -	\$ -	\$ 1,247,962
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		17,691.17		\$ -	\$ 17,691	\$ -	\$ 17,691
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,424,873	\$ 3,645,459	\$ 870,372	\$ 5,940,704

Propel NY - TO51 AS5

16- Existing Oakwood 138 Kv Upgrade

Total: \$ 2,224,926

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
16- Existing Oakwood 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 22,026	\$ 23,246	\$ 12,440	\$ 57,712
2. SUBSTATION FOUNDATIONS	\$ 51,316	\$ 58,647	\$ 36,655	\$ 146,618
3. SUBSTATION STRUCTURES	\$ 31,394	\$ 24,807	\$ 16,388	\$ 72,589
4. MAJOR EQUIPMENT	\$ 587,714	\$ 53,785	\$ 23,051	\$ 664,549
5. LOW VOLTAGE & CONTROL CABLE	\$ 23,839	\$ 6,446	\$ 1,289	\$ 31,574
6. CONDUIT & CABLE TRENCH	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID	\$ 6,124	\$ 4,115	\$ 819	\$ 11,058
8. CONTROL ENCLOSURE	\$ 83,151	\$ 66,521	\$ 16,630	\$ 166,302
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 83,335	\$ 258,571	\$ 58,455	\$ 400,361
SUBTOTAL (Costs):	\$ 897,261	\$ 504,237	\$ 169,777	\$ 1,571,275
CONTRACTOR MARK-UP (OH&P)	\$ 161,507	\$ 90,763	\$ 30,560	\$ 282,830
SUBTOTAL:	\$ 1,058,768	\$ 595,000	\$ 200,336	\$ 1,854,105
CONTINGENCY ON ENTIRE PROJECT	\$ 211,754	\$ 119,000	\$ 40,067	\$ 370,821
TOTAL:	\$ 1,270,522	\$ 714,000	\$ 240,404	\$ 2,224,926

Description of Work: Upgrades to the existing LIPA Oakwood Substation, located in the Hamlet of West Hills in the Town of Huntington in Suffolk County. Oakwood Substation is a 138 KV AIS substation with a 2-bus configuration with a tie breaker. The proposed Solution will re-classify the existing Greenlawn feeder pothead stand and connection as the second leg of the upgraded 2-cable circuit configuration from Oakwood to Syosset circuit and connect the re-classified Oakwood to Syosset second leg to the station via installation of a PASS circuit breaker. The Solution will also remove the existing aerial to underground connection for the existing Greenlawn to Syosset circuit, then install a new Greenlawn to Syosset Transition underground to overhead connection at an alternate location adjacent to the station. The additional circuit to be installed will connect to this revised connection point

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16- Existing Oakwood 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.1	ACRE	-	10,800.00	7,200.00	\$ -	\$ 927	\$ 618	\$ 1,545
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	138	CY		24.50	10.50	\$ -	\$ 3,393	\$ 1,454	\$ 4,847
1.5	Site Grading- Excavation for Substation Pad	415	CY		9.00	6.00	\$ -	\$ 3,739	\$ 2,493	\$ 6,232
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	224	CY		21.00	9.00	\$ -	\$ 4,711.14	\$ 2,019.06	\$ 6,730.20
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	337	CY		2.40	1.60	\$ -	\$ 808	\$ 538	\$ 1,346
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	224	CY	25.00	2.40	1.60	\$ 5,609	\$ 538	\$ 359	\$ 6,506
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	415	SY	11.00	6.00	4.00	\$ 4,570	\$ 2,493	\$ 1,662	\$ 8,724
1.11	Site Surfacing - Aggregate 6" Thick	415	SY	16.50	4.50	3.00	\$ 6,855	\$ 1,870	\$ 1,246	\$ 9,971
1.12	7' Station Fence w/ Barbed Wire & Grounding	200	LF	13.85	13.85	6.92	\$ 2,770	\$ 2,770	\$ 1,385	\$ 6,924
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	300	LF	2.41	3.16	0.72	\$ 723	\$ 948	\$ 216	\$ 1,887
1.18	Temporary fencing	200	LF	7.50	5.25	2.25	\$ 1,500	\$ 1,050	\$ 450	\$ 3,000
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 22,026	\$ 23,246	\$ 12,440	\$ 57,712
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA							
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 51,316	\$ 58,647	\$ 36,655	\$ 146,618
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	1	EA	5,694.00	3,928.86	2,619.24	\$ 5,694	\$ 3,929	\$ 2,619	\$ 12,242
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	30	LF	25.00	184.94	123.29	\$ 750	\$ 5,548	\$ 3,699	\$ 9,997
3.24	AL. Bus fittings	1	LS	900.00	900.00	450.00	\$ 900	\$ 900	\$ 450	\$ 2,250
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 31,394	\$ 24,807	\$ 16,388	\$ 72,589
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	1	EA	37,700.00	11,875.50	5,089.50	\$ 37,700	\$ 11,876	\$ 5,090	\$ 54,665
4.22	138kV, Cable sealing end	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.23	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 587,714	\$ 53,785	\$ 23,051	\$ 664,549

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	4,500	LF	5.30	1.43	0.29	\$ 23,839	\$ 6,446	\$ 1,289	\$ 31,574
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 23,839	\$ 6,446	\$ 1,289	\$ 31,574
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	750	LF	11.15	10.80	5.40	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF				\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF				\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	521	LF	2.09	3.42	1.46	\$ 1,090	\$ 1,780	\$ 763	\$ 3,633
7.2	Caweld, DSA, 4/0 , T, CROSS	24	EA	165.00	75.00		\$ 4,022	\$ 1,828	\$ -	\$ 5,850
7.3	Ground Rod, 3/4" x 15'	8	EA	135.00	67.50	7.50	\$ 1,013	\$ 506	\$ 56	\$ 1,575
TOTAL - GROUND GRID		-					\$ 6,124	\$ 4,115	\$ 819	\$ 11,058
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	41,575.50	33,260.40	8,315.10	\$ 41,576	\$ 33,260	\$ 8,315	\$ 83,151
8.3	Backup Line Relays (Pilot): GE L90	1	EA	41,575.50	33,260.40	8,315.10	\$ 41,576	\$ 33,260	\$ 8,315	\$ 83,151
8.4	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.5	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.6	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 83,151	\$ 66,521	\$ 16,630	\$ 166,302
16- Existing Oakwood 138 Kv_ Upgrade							\$ 813,927	\$ 245,666	\$ 111,322	\$ 1,170,915
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		12,494.58	5,354.82	\$ -	\$ 12,495	\$ 5,355	\$ 17,849
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		11,709.15		\$ -	\$ 11,709	\$ -	\$ 11,709
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		46,836.59		\$ -	\$ 46,837	\$ -	\$ 46,837
9.4	Utility PM and Project Oversight	1.0	LS		11,709.15		\$ -	\$ 11,709	\$ -	\$ 11,709
9.5	Site Accommodation, Facilities, Storage	1.0	LS	11,709.15			\$ 11,709	\$ -	\$ -	\$ 11,709
	Engineering									
9.6	Design Engineering	1.00	LS		93,673.17		\$ -	\$ 93,673	\$ -	\$ 93,673
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		8,196.40		\$ -	\$ 8,196	\$ -	\$ 8,196
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		43,909.30		\$ -	\$ 43,909	\$ -	\$ 43,909
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		11,709.15		\$ -	\$ 11,709	\$ -	\$ 11,709
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,512.74		\$ -	\$ 3,513	\$ -	\$ 3,513
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 44,000	\$ -	\$ -	\$ 44,000	\$ 44,000
9.20	Sales Tax on Materials	8.80%	LS	813,926.73			\$ 71,626	\$ -	\$ -	\$ 71,626
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,170.91		\$ -	\$ 1,171	\$ -	\$ 1,171
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 83,335	\$ 258,571	\$ 58,455	\$ 400,361

Propel NY - TO51 AS5

17 -Existing Syosset 138 Kv Transition Station

Total: \$ 2,353,243

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
17 -Existing Syosset 138 Kv_ Transition Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 178,386	\$ 203,869	\$ 127,418	\$ 509,673.07
3. SUBSTATION STRUCTURES	\$ 122,136	\$ 165,238	\$ 107,773	\$ 395,147.14
4. MAJOR EQUIPMENT	\$ 179,790	\$ 79,727	\$ 34,169	\$ 293,685.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 9,536	\$ 2,579	\$ 516	\$ 12,629.70
6. CONDUIT & CABLE TRENCH	\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,307.50
7. GROUND GRID	\$ 14,992	\$ 10,073	\$ 2,005	\$ 27,070.26
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 57,373	\$ 287,800	\$ 66,210	\$ 411,382.09
SUBTOTAL (Costs):	\$ 567,229	\$ 754,144	\$ 340,521	\$ 1,661,895
CONTRACTOR MARK-UP (OH&P)	\$ 102,101	\$ 135,746	\$ 61,294	\$ 299,141
SUBTOTAL:	\$ 669,331	\$ 889,890	\$ 401,815	\$ 1,961,036
CONTINGENCY ON ENTIRE PROJECT	\$ 133,866	\$ 177,978	\$ 80,363	\$ 392,207
TOTAL:	\$ 803,197	\$ 1,067,868	\$ 482,178	\$ 2,353,243

Description of Work: I Upgrades to the existing LIPA Syosset Transition Station, located near Woodbury Road in the Hamlet of Woodbury in the Town of Oyster Bay in Nassau County. Syosset Transition Station is a 138 KV underground to overhead transition station with two (2) transition pothead stands.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
17 -Existing Syosset 138 Kv_ Transition Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	36	CY	703.89	804.44	502.78	\$ 25,072	\$ 28,654	\$ 17,909	\$ 71,635
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.25	138kV, Bus support-1 Ph, low	41	CY	703.89	804.44	502.78	\$ 28,578	\$ 32,660	\$ 20,413	\$ 81,651
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA							
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 178,386	\$ 203,869	\$ 127,418	\$ 509,673
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	2	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	3	EA	4,173.00	1,919.76	1,919.84	\$ 12,519	\$ 8,639	\$ 5,760	\$ 26,918
3.16	138kV, Bus support-1 Ph, low	10	EA	2,782.00	1,919.84	1,279.89	\$ 27,820	\$ 19,198	\$ 12,799	\$ 59,817
3.17	138kV, Disconnect Switch	3	EA	5,694.00	3,928.86	2,619.24	\$ 17,082	\$ 11,787	\$ 7,858	\$ 36,726
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	9	EA	3,206.67	1,924.00	1,282.67	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	477	LF	25.00	184.94	123.29	\$ 11,925	\$ 88,215	\$ 58,810	\$ 158,951

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	AL. Bus fittings	1	LS	14,310.00	14,310.00	7,155.00	\$ 14,310	\$ 14,310	\$ 7,155	\$ 35,775
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 122,136	\$ 165,238	\$ 107,773	\$ 395,147
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	\$ 26,676	\$ 6,300	\$ 2,700	\$ 35,676
4.23	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 179,790	\$ 79,727	\$ 34,169	\$ 293,685

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	1,800	LF	5.30	1.43	0.29	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	450	LF	11.15	10.80	5.40	\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,308
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,308
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,276	LF	2.09	3.42	1.46	\$ 2,668	\$ 4,358	\$ 1,868	\$ 8,894
7.2	Caweld, DSA, 4/0 , T, CROSS	60	EA	165.00	75.00		\$ 9,846	\$ 4,475	\$ -	\$ 14,321
7.3	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	\$ 2,479	\$ 1,239	\$ 138	\$ 3,856
TOTAL - GROUND GRID		-					\$ 14,992	\$ 10,073	\$ 2,005	\$ 27,070
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (Pilot): GE L90	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.4	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.5	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.6	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
17 -Existing Syosset 138 Kv_ Transition Station							\$ 509,857	\$ 466,344	\$ 274,311	\$ 1,250,513
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		25,922.95	11,109.84	\$ -	\$ 25,923	\$ 11,110	\$ 37,033
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		12,505.13		\$ -	\$ 12,505	\$ -	\$ 12,505
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		50,020.51		\$ -	\$ 50,021	\$ -	\$ 50,021
9.4	Utility PM and Project Oversite	1.0	LS		12,505.13		\$ -	\$ 12,505	\$ -	\$ 12,505
9.5	Site Accommodation, Facilities, Storage	1.0	LS	12,505.13			\$ 12,505	\$ -	\$ -	\$ 12,505
	Engineering									
9.6	Design Engineering	1.00	LS		100,041.01		\$ -	\$ 100,041	\$ -	\$ 100,041
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		8,753.59		\$ -	\$ 8,754	\$ -	\$ 8,754
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		46,894.23		\$ -	\$ 46,894	\$ -	\$ 46,894
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		12,505.13		\$ -	\$ 12,505	\$ -	\$ 12,505
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,751.54		\$ -	\$ 3,752	\$ -	\$ 3,752
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 46,000	\$ -	\$ -	\$ 46,000	\$ 46,000
9.20	Sales Tax on Materials	8.80%	LS	509,856.88			\$ 44,867	\$ -	\$ -	\$ 44,867
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,250.51		\$ -	\$ 1,251	\$ -	\$ 1,251
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 57,373	\$ 287,800	\$ 66,210	\$ 411,382

Propel NY - TO51 AS5

AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit

Total: \$ 178,777,122

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,185,984	\$ 10,763,750	\$ 4,301,834	\$ 17,251,568
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 12,723,086	\$ 12,194,981	\$ 7,877,550	\$ 32,795,618
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 25,508,207	\$ 15,377,038	\$ 9,804,979	\$ 50,690,224
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,596,428	\$ 15,849,300	\$ 5,071,891	\$ 25,517,620
SUBTOTAL (Costs):	\$ 45,013,705	\$ 54,185,070	\$ 27,056,254	\$ 126,255,030
CONTRACTOR MARK-UP (OH&P)	\$ 8,102,467	\$ 9,753,313	\$ 4,870,126	\$ 22,725,905
SUBTOTAL:	\$ 53,116,172	\$ 63,938,383	\$ 31,926,380	\$ 148,980,935
CONTINGENCY ON ENTIRE PROJECT	\$ 10,623,234	\$ 12,787,677	\$ 6,385,276	\$ 29,796,187
TOTAL:	\$ 63,739,406	\$ 76,726,059	\$ 38,311,656	\$ 178,777,122

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.

Barrett to EGC section is 8.76 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.76	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 6,132,000	\$ 2,628,000	\$ 8,760,000
1.3	Flaggers	280	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 448,000	\$ 1,344,000	\$ 448,000	\$ 2,240,000
1.4	K Rail / Lane Control / Metal Plates	46,253	LF	\$ 30	\$ 18	\$ 12	\$ 1,387,584	\$ 832,550	\$ 555,034	\$ 2,775,168
1.5	Police Support	11,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,344,000	\$ 302,400	\$ 1,646,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	8.76	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 350,400	\$ 1,051,200	\$ 350,400	\$ 1,752,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,185,984	\$ 10,763,750	\$ 4,301,834	\$ 17,251,568
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.76	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,224,648	\$ 816,432	\$ 2,041,080
2.2	Formwork in Trench	358,646	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 717,293	\$ 537,970	\$ 179,323	\$ 1,434,586
2.3	Trench Excavation	30,950	CY		\$ 17.5	\$ 7.5	\$ -	\$ 541,622	\$ 232,124	\$ 773,746
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,934	SF	\$ 50	\$ 25	\$ 14	\$ 96,718	\$ 47,392	\$ 27,081	\$ 171,191
2.5	Supply & Install Thermal Backfill	17,086	CY	\$ 350	\$ 245	\$ 105	\$ 5,979,931	\$ 4,185,951	\$ 1,793,979	\$ 11,959,861
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,904	CY	\$ 200	\$ 125	\$ 50	\$ 1,380,789	\$ 862,993	\$ 345,197	\$ 2,588,979
2.9	Conduit 8" HDPE	138,758	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 2,850,098	\$ 786,760	\$ 337,183	\$ 3,974,041
2.10	Conduit 4" HDPE	46,253	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 248,378	\$ 194,262	\$ 83,255	\$ 525,894
2.11	Conduit 2" HDPE	46,253	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 88,343	\$ 145,696	\$ 62,441	\$ 296,480
2.12	Warning Tape	46,253	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,938	\$ 11,563	\$ 4,625	\$ 23,126
2.13	Trench Box Shoring (Vault)	31	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 560,452	\$ 840,678	\$ 1,401,130
2.14	Splice Vault Excavation	10,075	CY		\$ 17.5	\$ 7.5	\$ -	\$ 176,313	\$ 75,563	\$ 251,875
2.15	Splice Vault Supply & Installation	31	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,085,000	\$ 511,500	\$ 1,193,500	\$ 2,790,000
2.16	Splice Vault Backfill	3,023	CY		\$ 14.0	\$ 6.0	\$ -	\$ 42,315	\$ 18,135	\$ 60,450
2.17	Jack and Bore along Route	104	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 83,200	\$ 166,400	\$ 166,400	\$ 416,000
2.18	HDD along Route	233	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 186,400	\$ 372,800	\$ 372,800	\$ 932,000
2.19	Air Test Ducts	231,264	LF			\$ 0.25	\$ -	\$ -	\$ 57,816	\$ 57,816

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	0	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ -	\$ -	\$ -	\$ -
2.21	PVMT, AGGREGATE, 10", BASE COURSE	0	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ -	\$ -	\$ -	\$ -
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	69	EA		\$ 400	\$ 1,200	\$ -	\$ 27,616	\$ 82,847	\$ 110,463
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	69	EA		\$ 10	\$ 15	\$ -	\$ 690	\$ 1,036	\$ 1,726
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	171	EA		\$ 400	\$ 1,200	\$ -	\$ 68,342	\$ 205,026	\$ 273,368
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 478,296	\$ 318,864	\$ -	\$ 478,296	\$ 318,864	\$ 797,160
2.26	Excess Materials Disposal to Certified Backfill	49,403	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,210,375	\$ 518,732	\$ 1,729,107
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	31	EA			\$ 4,000	\$ -	\$ -	\$ 124,000	\$ 124,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,025	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,025	\$ 20,512	\$ 61,537
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 12,723,086	\$ 12,194,981	\$ 7,877,550	\$ 32,795,618
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	145,696	FT	\$ 154	\$ 92	\$ 62	\$ 22,437,233	\$ 13,462,340	\$ 8,974,893	\$ 44,874,467
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	93	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,090,146	\$ 763,102	\$ 218,029	\$ 2,071,277
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	31	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 821,514	\$ 575,060	\$ 246,454	\$ 1,643,028
3.11	Fiber Optic Cable	48,565	FT	\$ 7	\$ 3	\$ 2	\$ 359,239	\$ 161,752	\$ 107,835	\$ 628,825
3.12	Ground Continuity Conductor	48,565	FT	\$ 13	\$ 8	\$ 5	\$ 633,245	\$ 365,552	\$ 243,701	\$ 1,242,498
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 25,508,207	\$ 15,377,038	\$ 9,804,979	\$ 50,690,224
AS 5.1. Barrett to East Garden City 345kV Onshore UG Cables -single circuit							\$ 40,417,277	\$ 38,335,770	\$ 21,984,363	\$ 100,737,410
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,809,604	\$ 1,206,403	\$ -	\$ 1,809,604	\$ 1,206,403	\$ 3,016,007
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,007,374.10		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,029,496.40		\$ -	\$ 4,029,496	\$ -	\$ 4,029,496
4.4	Utility PM and Project Oversight	1.0	LS		1,007,374.10		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,007,374.10			\$ 1,007,374	\$ -	\$ -	\$ 1,007,374
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,036,871	\$ -	\$ -	\$ 5,036,871	\$ -	\$ 5,036,871
4.7	LiDAR /GPR	1.0	LS		\$ 181,327	\$ 120,885	\$ -	\$ 181,327	\$ 120,885	\$ 302,212
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 423,097		\$ -	\$ 423,097	\$ -	\$ 423,097
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,007,374		\$ -	\$ 1,007,374	\$ -	\$ 1,007,374
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 302,212		\$ -	\$ 302,212	\$ -	\$ 302,212
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 63,579	\$ -	\$ -	\$ 63,579	\$ 63,579
4.16	Legal Fees (Real estate)	1.00	LS		-	1,907.37	\$ -	\$ -	\$ 1,907	\$ 1,907
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	2	Crossing			\$ 1,000	\$ -	\$ -	\$ 2,000	\$ 2,000
4.19	Bonds	1	LS			\$ 3,560,000	\$ -	\$ -	\$ 3,560,000	\$ 3,560,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 40,417,276.74			\$ 3,589,054	\$ -	\$ -	\$ 3,589,054
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 100,737	\$ -	\$ -	\$ 100,737	\$ 100,737
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,596,428	\$ 15,849,300	\$ 5,071,891	\$ 25,517,620

Propel NY - TO51 AS5

AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit

Total: \$ 546,334,828

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163
SUBTOTAL (Costs):	\$ 128,284,803	\$ 166,136,233	\$ 91,408,645	\$ 385,829,681
CONTRACTOR MARK-UP (OH&P)	\$ 23,091,265	\$ 29,904,522	\$ 16,453,556	\$ 69,449,343
SUBTOTAL:	\$ 151,376,067	\$ 196,040,755	\$ 107,862,202	\$ 455,279,024
CONTINGENCY ON ENTIRE PROJECT	\$ 30,275,213	\$ 39,208,151	\$ 21,572,440	\$ 91,055,805
TOTAL:	\$ 181,651,281	\$ 235,248,906	\$ 129,434,642	\$ 546,334,828

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene (“XLPE”)cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique.

Barrett to EGC section is 23.46 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	23.46	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 16,422,000	\$ 7,038,000	\$ 23,460,000
1.3	Flaggers	720	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,152,000	\$ 3,456,000	\$ 1,152,000	\$ 5,760,000
1.4	K Rail / Lane Control / Metal Plates	123,869	LF	\$ 30	\$ 18	\$ 12	\$ 3,716,064	\$ 2,229,638	\$ 1,486,426	\$ 7,432,128
1.5	Police Support	28,800.0	HR		\$ 120	\$ 27	\$ -	\$ 3,456,000	\$ 777,600	\$ 4,233,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	23.46	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 938,400	\$ 2,815,200	\$ 938,400	\$ 4,692,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,806,464	\$ 28,498,838	\$ 11,428,426	\$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	23.46	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 3,279,708	\$ 2,186,472	\$ 5,466,180
2.2	Formwork in Trench	878,054	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,756,109	\$ 1,317,082	\$ 439,027	\$ 3,512,218
2.3	Trench Excavation	75,773	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,326,025	\$ 568,296	\$ 1,894,321
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,736	SF	\$ 50	\$ 25	\$ 14	\$ 236,790	\$ 116,027	\$ 66,301	\$ 419,119
2.5	Supply & Install Thermal Backfill	41,830	CY	\$ 350	\$ 245	\$ 105	\$ 14,640,338	\$ 10,248,236	\$ 4,392,101	\$ 29,280,675
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	16,903	CY	\$ 200	\$ 125	\$ 50	\$ 3,380,509	\$ 2,112,818	\$ 845,127	\$ 6,338,455
2.9	Conduit 8" HDPE	371,606	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 7,632,795	\$ 2,107,008	\$ 903,004	\$ 10,642,807
2.10	Conduit 4" HDPE	123,869	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 665,175	\$ 520,249	\$ 222,964	\$ 1,408,388
2.11	Conduit 2" HDPE	123,869	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 236,589	\$ 390,187	\$ 167,223	\$ 793,999
2.12	Warning Tape	123,869	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 18,580	\$ 30,967	\$ 12,387	\$ 61,934
2.13	Trench Box Shoring (Vault)	80	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,446,328	\$ 2,169,492	\$ 3,615,819
2.14	Splice Vault Excavation	26,000	CY		\$ 17.5	\$ 7.5	\$ -	\$ 455,000	\$ 195,000	\$ 650,000
2.15	Splice Vault Supply & Installation	80	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,800,000	\$ 1,320,000	\$ 3,080,000	\$ 7,200,000
2.16	Splice Vault Backfill	7,800	CY		\$ 14.0	\$ 6.0	\$ -	\$ 109,200	\$ 46,800	\$ 156,000
2.17	Jack and Bore along Route	240	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 192,000	\$ 384,000	\$ 384,000	\$ 960,000
2.18	HDD along Route	11,072	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 8,857,600	\$ 17,715,200	\$ 17,715,200	\$ 44,288,000
2.19	Air Test Ducts	619,344	LF			\$ 0.25	\$ -	\$ -	\$ 154,836	\$ 154,836
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	45,810	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 641,340	\$ 641,340	\$ 320,670	\$ 1,603,351
2.21	PVMT, AGGREGATE, 10", BASE COURSE	12,725	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 284,786	\$ 299,025	\$ 128,154	\$ 711,964

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	169	EA		\$ 400	\$ 1,200	\$ -	\$ 67,610	\$ 202,831	\$ 270,441
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	169	EA		\$ 10	\$ 15	\$ -	\$ 1,690	\$ 2,535	\$ 4,226
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	418	EA		\$ 400	\$ 1,200	\$ -	\$ 167,318	\$ 501,954	\$ 669,273
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,280,916	\$ 853,944	\$ -	\$ 1,280,916	\$ 853,944	\$ 2,134,860
2.26	Excess Materials Disposal to Certified Backfill	122,165	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,993,035	\$ 1,282,729	\$ 4,275,764
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	80	EA			\$ 4,000	\$ -	\$ -	\$ 320,000	\$ 320,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	101,773	CF		\$ 1.0	\$ 0.5	\$ -	\$ 101,773	\$ 50,886	\$ 152,659
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 41,342,612	\$ 48,430,743	\$ 37,211,934	\$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	390,187	FT	\$ 154	\$ 92	\$ 62	\$ 60,088,755	\$ 36,053,253	\$ 24,035,502	\$ 120,177,510
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	240	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,813,280	\$ 1,969,296	\$ 562,656	\$ 5,345,232
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	80	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,120,036	\$ 1,484,025	\$ 636,011	\$ 4,240,072
3.11	Fiber Optic Cable	130,062	FT	\$ 7	\$ 3	\$ 2	\$ 962,070	\$ 433,185	\$ 288,790	\$ 1,684,046
3.12	Ground Continuity Conductor	130,062	FT	\$ 13	\$ 8	\$ 5	\$ 1,695,882	\$ 978,978	\$ 652,652	\$ 3,327,512
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 67,846,853	\$ 40,967,970	\$ 26,189,678	\$ 135,004,501
AS 5.2. East Garden City To Tremont 345kV Onshore UG Cables -single circuit							\$ 114,995,929	\$ 117,897,551	\$ 74,830,037	\$ 307,723,518
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,781,828	\$ 3,854,552	\$ -	\$ 5,781,828	\$ 3,854,552	\$ 9,636,379
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		12,308,940.71		\$ -	\$ 12,308,941	\$ -	\$ 12,308,941
4.4	Utility PM and Project Oversight	1.0	LS		3,077,235.18		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.5	Site Accommodation, Facilities, Storage	1.0	LS	3,077,235.18			\$ 3,077,235	\$ -	\$ -	\$ 3,077,235
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 15,386,176	\$ -	\$ -	\$ 15,386,176	\$ -	\$ 15,386,176
4.7	LiDAR /GPR	1.0	LS		\$ 553,902	\$ 369,268	\$ -	\$ 553,902	\$ 369,268	\$ 923,171
4.8	Geotech	24.0	Location		2,730.00	1,820.00	\$ -	\$ 65,520	\$ 43,680	\$ 109,200
4.9	Surveying/Staking	1	LS		\$ 1,292,439		\$ -	\$ 1,292,439	\$ -	\$ 1,292,439
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,077,235		\$ -	\$ 3,077,235	\$ -	\$ 3,077,235
4.12	Environmental-special studies/investigation	1	LS		\$ 175,000		\$ -	\$ 175,000	\$ -	\$ 175,000
4.13	Warranties / LOC's	1	LS		\$ 923,171		\$ -	\$ 923,171	\$ -	\$ 923,171
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 1,050,859	\$ -	\$ -	\$ 1,050,859	\$ 1,050,859
4.16	Legal Fees (Real estate)	1.00	LS		-	31,525.77	\$ -	\$ -	\$ 31,526	\$ 31,526
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 10,920,000	\$ -	\$ -	\$ 10,920,000	\$ 10,920,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 114,995,929.25			\$ 10,211,639	\$ -	\$ -	\$ 10,211,639
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 307,724	\$ -	\$ -	\$ 307,724	\$ 307,724
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,288,874	\$ 48,238,681	\$ 16,578,608	\$ 78,106,163

Propel NY - TO51 AS5

AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit

Total: \$ 14,344,239

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 355,831	\$ 1,668,541	\$ 441,154	\$ 2,465,525
SUBTOTAL (Costs):	\$ 3,499,803	\$ 4,546,049	\$ 2,084,260	\$ 10,130,112
CONTRACTOR MARK-UP (OH&P)	\$ 629,965	\$ 818,289	\$ 375,167	\$ 1,823,420
SUBTOTAL:	\$ 4,129,768	\$ 5,364,338	\$ 2,459,426	\$ 11,953,532
CONTINGENCY ON ENTIRE PROJECT	\$ 825,954	\$ 1,072,868	\$ 491,885	\$ 2,390,706
TOTAL:	\$ 4,955,721	\$ 6,437,206	\$ 2,951,312	\$ 14,344,239

Description of Work: reconductoring/conversion of an existing LIPA 138 kV circuit between the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County, to the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County, via the Newbridge Road Substation in the Hamlet of East Meadow in the Town of Hempstead in Nassau County. A new 0.6 mile 345 kV line will be spliced to the existing line, creating a continuous 345 kV feed between the substations. The routing would be the existing underground routing using the LIPA-owned transmission corridors.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.63	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 441,000	\$ 189,000	\$ 630,000
1.3	Flaggers	20	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 32,000	\$ 96,000	\$ 32,000	\$ 160,000
1.4	K Rail / Lane Control / Metal Plates	3,326	LF	\$ 30	\$ 18	\$ 12	\$ 99,792	\$ 59,875	\$ 39,917	\$ 199,584
1.5	Police Support	800.0	HR		\$ 120	\$ 27	\$ -	\$ 96,000	\$ 21,600	\$ 117,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	0.63	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 25,200	\$ 75,600	\$ 25,200	\$ 126,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 156,992	\$ 788,475	\$ 313,717	\$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.63	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 88,074	\$ 58,716	\$ 146,790
2.2	Formwork in Trench	25,771	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 51,542	\$ 38,657	\$ 12,886	\$ 103,085
2.3	Trench Excavation	2,224	CY		\$ 17.5	\$ 7.5	\$ -	\$ 38,919	\$ 16,680	\$ 55,599
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	139	SF	\$ 50	\$ 25	\$ 14	\$ 6,950	\$ 3,405	\$ 1,946	\$ 12,301
2.5	Supply & Install Thermal Backfill	1,228	CY	\$ 350	\$ 245	\$ 105	\$ 429,699	\$ 300,789	\$ 128,910	\$ 859,398
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	496	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 99,219	\$ 62,012	\$ 24,805	\$ 186,036
2.9	Conduit 8" HDPE	9,979	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 204,973	\$ 56,582	\$ 24,249	\$ 285,804
2.10	Conduit 4" HDPE	3,326	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 17,863	\$ 13,971	\$ 5,988	\$ 37,821
2.11	Conduit 2" HDPE	3,326	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 6,353	\$ 10,478	\$ 4,491	\$ 21,322
2.12	Warning Tape	3,326	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 499	\$ 832	\$ 333	\$ 1,663
2.13	Trench Box Shoring (Vault)	3	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 54,237	\$ 81,356	\$ 135,593
2.14	Splice Vault Excavation	975	CY		\$ 17.5	\$ 7.5	\$ -	\$ 17,063	\$ 7,313	\$ 24,375
2.15	Splice Vault Supply & Installation	3	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 105,000	\$ 49,500	\$ 115,500	\$ 270,000
2.16	Splice Vault Backfill	293	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,095	\$ 1,755	\$ 5,850
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	16,632	LF			\$ 0.25	\$ -	\$ -	\$ 4,158	\$ 4,158

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	1,387	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 19,417	\$ 19,417	\$ 9,708	\$ 48,542
2.21	PVMT, AGGREGATE, 10", BASE COURSE	385	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 8,622	\$ 9,053	\$ 3,880	\$ 21,555
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	5	EA		\$ 400	\$ 1,200	\$ -	\$ 1,984	\$ 5,953	\$ 7,938
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	5	EA		\$ 10	\$ 15	\$ -	\$ 50	\$ 74	\$ 124
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	12	EA		\$ 400	\$ 1,200	\$ -	\$ 4,911	\$ 14,733	\$ 19,643
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 34,398	\$ 22,932	\$ -	\$ 34,398	\$ 22,932	\$ 57,330
2.26	Excess Materials Disposal to Certified Backfill	3,778	CY		\$ 24.5	\$ 10.5	\$ -	\$ 92,571	\$ 39,673	\$ 132,244
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	3	EA			\$ 4,000	\$ -	\$ -	\$ 12,000	\$ 12,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	3,199	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,199	\$ 1,599	\$ 4,798
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 950,137	\$ 904,197	\$ 599,636	\$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	10,478	FT	\$ 154	\$ 92	\$ 62	\$ 1,613,637	\$ 968,182	\$ 645,455	\$ 3,227,273
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	9	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 105,498	\$ 73,849	\$ 21,100	\$ 200,446
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	3	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 79,501	\$ 55,651	\$ 23,850	\$ 159,003
3.11	Fiber Optic Cable	3,493	FT	\$ 7	\$ 3	\$ 2	\$ 25,836	\$ 11,633	\$ 7,755	\$ 45,224
3.12	Ground Continuity Conductor	3,493	FT	\$ 13	\$ 8	\$ 5	\$ 45,542	\$ 26,290	\$ 17,526	\$ 89,358
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 2,036,843	\$ 1,184,836	\$ 729,753	\$ 3,951,432
AS 5.3. East Garden City to Ruland 345kV Onshore UG Cables -single circuit							\$ 3,143,972	\$ 2,877,508	\$ 1,643,106	\$ 7,664,587
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 135,618	\$ 90,412	\$ -	\$ 135,618	\$ 90,412	\$ 226,031
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		306,583.47		\$ -	\$ 306,583	\$ -	\$ 306,583
4.4	Utility PM and Project Oversight	1.0	LS		76,645.87		\$ -	\$ 76,646	\$ -	\$ 76,646
4.5	Site Accommodation, Facilities, Storage	1.0	LS	76,645.87			\$ 76,646	\$ -	\$ -	\$ 76,646
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 383,229	\$ -	\$ -	\$ 383,229	\$ -	\$ 383,229
4.7	LiDAR /GPR	1.0	LS		\$ 13,796	\$ 9,198	\$ -	\$ 13,796	\$ 9,198	\$ 22,994
4.8	Geotech	1.0	Location		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 53,652		\$ -	\$ 53,652	\$ -	\$ 53,652
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 76,646		\$ -	\$ 76,646	\$ -	\$ 76,646
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 22,994		\$ -	\$ 22,994	\$ -	\$ 22,994
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 50,543	\$ -	\$ -	\$ 50,543	\$ 50,543
4.16	Legal Fees (Real estate)	1.00	LS		-	1,516.29	\$ -	\$ -	\$ 1,516	\$ 1,516
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 280,000	\$ -	\$ -	\$ 280,000	\$ 280,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 3,143,972			\$ 279,185	\$ -	\$ -	\$ 279,185
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 7,665	\$ -	\$ -	\$ 7,665	\$ 7,665
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 355,831	\$ 1,668,541	\$ 441,154	\$ 2,465,525

Propel NY - TO51 AS5

AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 211,488,737

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945
SUBTOTAL (Costs):	\$ 53,010,451	\$ 64,488,496	\$ 31,857,505	\$ 149,356,453
CONTRACTOR MARK-UP (OH&P)	\$ 9,541,881	\$ 11,607,929	\$ 5,734,351	\$ 26,884,162
SUBTOTAL:	\$ 62,552,333	\$ 76,096,426	\$ 37,591,856	\$ 176,240,614
CONTINGENCY ON ENTIRE PROJECT	\$ 12,510,467	\$ 15,219,285	\$ 7,518,371	\$ 35,248,123
TOTAL:	\$ 75,062,799	\$ 91,315,711	\$ 45,110,228	\$ 211,488,737

Description of Work: The proposed 345 kV and 138 kV electric underground transmission lines extending from the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County to the Shore Road Substation in the Glenwood Landing Hamlet in Nassau County. The proposed route will be approximately 10.3 miles, utilizing 4000 kcmil XLPE cable for the route.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	10.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,175,000	\$ 3,075,000	\$ 10,250,000
1.3	Flaggers	320	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 512,000	\$ 1,536,000	\$ 512,000	\$ 2,560,000
1.4	K Rail / Lane Control / Metal Plates	54,120	LF	\$ 30	\$ 18	\$ 12	\$ 1,623,600	\$ 974,160	\$ 649,440	\$ 3,247,200
1.5	Police Support	12,800.0	HR		\$ 120	\$ 27	\$ -	\$ 1,536,000	\$ 345,600	\$ 1,881,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	10.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 410,000	\$ 1,230,000	\$ 410,000	\$ 2,050,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,545,600	\$ 12,531,160	\$ 5,016,040	\$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,432,950	\$ 955,300	\$ 2,388,250
2.2	Formwork in Trench	419,712	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 839,424	\$ 629,568	\$ 209,856	\$ 1,678,848
2.3	Trench Excavation	36,220	CY		\$ 17.5	\$ 7.5	\$ -	\$ 633,843	\$ 271,647	\$ 905,490
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,264	SF	\$ 50	\$ 25	\$ 14	\$ 113,186	\$ 55,461	\$ 31,692	\$ 200,340
2.5	Supply & Install Thermal Backfill	19,995	CY	\$ 350	\$ 245	\$ 105	\$ 6,998,115	\$ 4,898,680	\$ 2,099,434	\$ 13,996,229
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,079	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,615,891	\$ 1,009,932	\$ 403,973	\$ 3,029,796
2.9	Conduit 8" HDPE	162,360	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 3,334,874	\$ 920,581	\$ 394,535	\$ 4,649,990
2.10	Conduit 4" HDPE	54,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 290,624	\$ 227,304	\$ 97,416	\$ 615,344
2.11	Conduit 2" HDPE	54,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 103,369	\$ 170,478	\$ 73,062	\$ 346,909
2.12	Warning Tape	54,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,118	\$ 13,530	\$ 5,412	\$ 27,060
2.13	Trench Box Shoring (Vault)	35	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 632,768	\$ 949,153	\$ 1,581,921
2.14	Splice Vault Excavation	11,375	CY		\$ 17.5	\$ 7.5	\$ -	\$ 199,063	\$ 85,313	\$ 284,375
2.15	Splice Vault Supply & Installation	35	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,225,000	\$ 577,500	\$ 1,347,500	\$ 3,150,000
2.16	Splice Vault Backfill	3,413	CY		\$ 14.0	\$ 6.0	\$ -	\$ 47,775	\$ 20,475	\$ 68,250
2.17	Jack and Bore along Route	113	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 90,400	\$ 180,800	\$ 180,800	\$ 452,000
2.18	HDD along Route	318	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 254,400	\$ 508,800	\$ 508,800	\$ 1,272,000
2.19	Air Test Ducts	270,600	LF			\$ 0.25	\$ -	\$ -	\$ 67,650	\$ 67,650

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,687	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 303,614	\$ 303,614	\$ 151,807	\$ 759,034
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,024	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 134,819	\$ 141,560	\$ 60,668	\$ 337,047
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	81	EA		\$ 400	\$ 1,200	\$ -	\$ 32,318	\$ 96,953	\$ 129,271
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	81	EA		\$ 10	\$ 15	\$ -	\$ 808	\$ 1,212	\$ 2,020
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	200	EA		\$ 400	\$ 1,200	\$ -	\$ 79,978	\$ 239,935	\$ 319,914
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 559,650	\$ 373,100	\$ -	\$ 559,650	\$ 373,100	\$ 932,750
2.26	Excess Materials Disposal to Certified Backfill	57,437	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,407,200	\$ 603,086	\$ 2,010,285
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	35	EA			\$ 4,000	\$ -	\$ -	\$ 140,000	\$ 140,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	47,595	CF		\$ 1.0	\$ 0.5	\$ -	\$ 47,595	\$ 23,797	\$ 71,392
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 15,311,834	\$ 14,711,755	\$ 9,392,576	\$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	170,478	FT	\$ 154	\$ 92	\$ 62	\$ 26,253,612	\$ 15,752,167	\$ 10,501,445	\$ 52,507,224
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	105	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,230,810	\$ 861,567	\$ 246,162	\$ 2,338,539
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	35	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 927,516	\$ 649,261	\$ 278,255	\$ 1,855,032
3.11	Fiber Optic Cable	56,826	FT	\$ 7	\$ 3	\$ 2	\$ 420,342	\$ 189,265	\$ 126,176	\$ 735,783
3.12	Ground Continuity Conductor	56,826	FT	\$ 13	\$ 8	\$ 5	\$ 740,954	\$ 427,729	\$ 285,153	\$ 1,453,836
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 29,740,064	\$ 17,929,222	\$ 11,451,257	\$ 59,120,543
AS 5.4. East Garden City to Shore Road 345kV Onshore UG Cables -single circuit							\$ 47,597,498	\$ 45,172,137	\$ 25,859,873	\$ 118,629,508
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,130,960	\$ 1,420,640	\$ -	\$ 2,130,960	\$ 1,420,640	\$ 3,551,600
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,745,180.33		\$ -	\$ 4,745,180	\$ -	\$ 4,745,180
4.4	Utility PM and Project Oversight	1.0	LS		1,186,295.08		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,186,295.08			\$ 1,186,295	\$ -	\$ -	\$ 1,186,295
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,931,475	\$ -	\$ -	\$ 5,931,475	\$ -	\$ 5,931,475
4.7	LiDAR /GPR	1.0	LS		\$ 213,533	\$ 142,355	\$ -	\$ 213,533	\$ 142,355	\$ 355,889
4.8	Geotech	11.0	Location		2,730.00	1,820.00	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 830,407		\$ -	\$ 830,407	\$ -	\$ 830,407
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,186,295		\$ -	\$ 1,186,295	\$ -	\$ 1,186,295
4.12	Environmental-special studies/investigation	1	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 355,889		\$ -	\$ 355,889	\$ -	\$ 355,889
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 72,803	\$ -	\$ -	\$ 72,803	\$ 72,803
4.16	Legal Fees (Real estate)	1.00	LS		\$ -	2,184.09	\$ -	\$ -	\$ 2,184	\$ 2,184
4.17	Insurance	-	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	100.00%	LS			\$ 4,220,000	\$ -	\$ -	\$ 4,220,000	\$ 4,220,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 47,597,498			\$ 4,226,658	\$ -	\$ -	\$ 4,226,658
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 118,630	\$ -	\$ -	\$ 118,630	\$ 118,630
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,412,953	\$ 19,316,359	\$ 5,997,632	\$ 30,726,945

Propel NY - TO51 AS5

AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 359,455,633

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552
SUBTOTAL (Costs):	\$ 91,556,197	\$ 107,706,768	\$ 54,589,882	\$ 253,852,848
CONTRACTOR MARK-UP (OH&P)	\$ 16,480,115	\$ 19,387,218	\$ 9,826,179	\$ 45,693,513
SUBTOTAL:	\$ 108,036,313	\$ 127,093,987	\$ 64,416,061	\$ 299,546,360
CONTINGENCY ON ENTIRE PROJECT	\$ 21,607,263	\$ 25,418,797	\$ 12,883,212	\$ 59,909,272
TOTAL:	\$ 129,643,575	\$ 152,512,784	\$ 77,299,273	\$ 359,455,633

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	17.83	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 12,481,000	\$ 5,349,000	\$ 17,830,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	94,142	LF	\$ 30	\$ 18	\$ 12	\$ 2,824,272	\$ 1,694,563	\$ 1,129,709	\$ 5,648,544
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	17.83	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 713,200	\$ 2,139,600	\$ 713,200	\$ 3,566,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	17.83	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,492,634	\$ 1,661,756	\$ 4,154,390
2.2	Formwork in Trench	734,083	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,468,166	\$ 1,101,125	\$ 367,042	\$ 2,936,333
2.3	Trench Excavation	63,349	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,108,602	\$ 475,115	\$ 1,583,717
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,959	SF	\$ 50	\$ 25	\$ 14	\$ 197,965	\$ 97,003	\$ 55,430	\$ 350,397
2.5	Supply & Install Thermal Backfill	34,971	CY	\$ 350	\$ 245	\$ 105	\$ 12,239,818	\$ 8,567,872	\$ 3,671,945	\$ 24,479,636
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,131	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,826,220	\$ 1,766,388	\$ 706,555	\$ 5,299,163
2.9	Conduit 8" HDPE	282,427	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,801,055	\$ 1,601,362	\$ 686,298	\$ 8,088,715
2.10	Conduit 4" HDPE	94,142	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 505,545	\$ 395,398	\$ 169,456	\$ 1,070,399
2.11	Conduit 2" HDPE	94,142	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 179,812	\$ 296,549	\$ 127,092	\$ 603,453
2.12	Warning Tape	94,142	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,121	\$ 23,536	\$ 9,414	\$ 47,071
2.13	Trench Box Shoring (Vault)	62	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,120,904	\$ 1,681,356	\$ 2,802,260
2.14	Splice Vault Excavation	20,150	CY		\$ 17.5	\$ 7.5	\$ -	\$ 352,625	\$ 151,125	\$ 503,750
2.15	Splice Vault Supply & Installation	62	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,170,000	\$ 1,023,000	\$ 2,387,000	\$ 5,580,000
2.16	Splice Vault Backfill	6,045	CY		\$ 14.0	\$ 6.0	\$ -	\$ 84,630	\$ 36,270	\$ 120,900
2.17	Jack and Bore along Route	212	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 169,600	\$ 339,200	\$ 339,200	\$ 848,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	470,712	LF			\$ 0.25	\$ -	\$ -	\$ 117,678	\$ 117,678
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	37,981	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 531,739	\$ 531,739	\$ 265,869	\$ 1,329,347
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,550	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 236,117	\$ 247,923	\$ 106,253	\$ 590,293
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	141	EA		\$ 400	\$ 1,200	\$ -	\$ 56,524	\$ 169,573	\$ 226,098
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	141	EA		\$ 10	\$ 15	\$ -	\$ 1,413	\$ 2,120	\$ 3,533
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	350	EA		\$ 400	\$ 1,200	\$ -	\$ 139,884	\$ 419,651	\$ 559,535
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 973,518	\$ 649,012	\$ -	\$ 973,518	\$ 649,012	\$ 1,622,530
2.26	Excess Materials Disposal to Certified Backfill	100,690	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,466,899	\$ 1,057,242	\$ 3,524,142
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	62	EA			\$ 4,000	\$ -	\$ -	\$ 248,000	\$ 248,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	83,499	CF		\$ 1.0	\$ 0.5	\$ -	\$ 83,499	\$ 41,749	\$ 125,248
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	296,549	FT	\$ 154	\$ 92	\$ 62	\$ 45,668,478	\$ 27,401,087	\$ 18,267,391	\$ 91,336,956
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	62	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,643,028	\$ 1,150,120	\$ 492,908	\$ 3,286,056
3.11	Fiber Optic Cable	98,850	FT	\$ 7	\$ 3	\$ 2	\$ 731,190	\$ 329,228	\$ 219,485	\$ 1,279,904
3.12	Ground Continuity Conductor	98,850	FT	\$ 13	\$ 8	\$ 5	\$ 1,288,899	\$ 744,040	\$ 496,027	\$ 2,528,966
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
AS 5.5. Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit							\$ 82,228,347	\$ 76,499,301	\$ 43,869,648	\$ 202,597,296
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,611,068	\$ 2,407,379	\$ -	\$ 3,611,068	\$ 2,407,379	\$ 6,018,447
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		8,103,891.84		\$ -	\$ 8,103,892	\$ -	\$ 8,103,892
4.4	Utility PM and Project Oversight	1.0	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,025,972.96			\$ 2,025,973	\$ -	\$ -	\$ 2,025,973
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,129,865	\$ -	\$ -	\$ 10,129,865	\$ -	\$ 10,129,865
4.7	LiDAR /GPR	1.0	LS		\$ 364,675	\$ 243,117	\$ -	\$ 364,675	\$ 243,117	\$ 607,792
4.8	Geotech	18.0	Location		2,730.00	1,820.00	\$ -	\$ 49,140	\$ 32,760	\$ 81,900
4.9	Surveying/Staking	1	LS		\$ 850,909		\$ -	\$ 850,909	\$ -	\$ 850,909
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,025,973		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.12	Environmental-special studies/investigation	1	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 607,792	\$ -	\$ -	\$ 607,792	\$ 607,792
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 45,232	\$ -	\$ -	\$ 45,232	\$ 45,232
4.16	Legal Fees (Real estate)	1.00	LS		-	1,356.96	\$ -	\$ -	\$ 1,357	\$ 1,357
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 7,180,000	\$ -	\$ -	\$ 7,180,000	\$ 7,180,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 82,228,347			\$ 7,301,877	\$ -	\$ -	\$ 7,301,877
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 202,597	\$ -	\$ -	\$ 202,597	\$ 202,597
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552

Propel NY - TO51 AS5

AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)

Total: \$ 466,224,722

AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)				
1. SUBMARINE CABLE	\$ 83,811,284	\$ 105,456,021	\$ 71,430,310	\$ 260,697,615
2. TRANSITION STATION	\$ 1,111,500	\$ 1,104,004	\$ 1,062,536	\$ 3,278,040
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 10,112,962	\$ 39,600,811	\$ 15,565,320	\$ 65,279,093
SUBTOTAL (Costs):	\$ 95,035,745	\$ 146,160,836	\$ 88,058,167	\$ 329,254,747
CONTRACTOR MARK-UP (OH&P)	\$ 17,106,434	\$ 26,308,950	\$ 15,850,470	\$ 59,265,855
SUBTOTAL:	\$ 112,142,179	\$ 172,469,786	\$ 103,908,636	\$ 388,520,602
CONTINGENCY ON ENTIRE PROJECT	\$ 22,428,436	\$ 34,493,957	\$ 20,781,727	\$ 77,704,120
TOTAL:	\$ 134,570,615	\$ 206,963,743	\$ 124,690,364	\$ 466,224,722

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA + Vessel Install	200,492	FT	\$ 375	\$ 400	\$ 250	\$ 75,184,560	\$ 80,196,864	\$ 50,123,040	\$ 205,504,464
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 10,147,637	\$ 6,765,092	\$ -	\$ 10,147,637	\$ 6,765,092	\$ 16,912,729
1.3	Submarine Cable Splicing if Required 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	24	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 669,858	\$ 893,144	\$ 669,858	\$ 2,232,859
1.5	Outdoor Termination	24	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 669,858	\$ 893,144	\$ 669,858	\$ 2,232,859
1.6	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.7	HDD along Route	4,062	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,499,840	\$ 12,999,680	\$ 12,999,680	\$ 32,499,200
1.8	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 33,891	\$ 22,594	\$ -	\$ 33,891	\$ 22,594	\$ 56,485
1.9	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
1.10	Trench Excavation	1,612	CY		\$ 17.5	\$ 7.5	\$ -	\$ 28,207	\$ 12,089	\$ 40,296
1.11	Supply & Install 6" Sand Bedding for direct bury conduits	101	SF	\$ 50	\$ 25	\$ 14	\$ 5,037	\$ 2,468	\$ 1,410	\$ 8,916
1.13	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
1.14	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
1.15	Native Backfill -direct bury conduits sys Trench	1,371	CY		\$ 14.0	\$ 6.0	\$ -	\$ 19,194	\$ 8,226	\$ 27,420
1.16	Conduit 15" HDPE	5,120	LF	\$ 150.0	\$ 45.0	\$ 30.0	\$ 768,000	\$ 230,400	\$ 153,600	\$ 1,152,000
1.17	Conduit 4" HDPE	2,560	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 13,747	\$ 10,752	\$ 4,608	\$ 29,107
1.18	Conduit 2" HDPE	0	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
1.19	Warning Tape	2,560	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 384	\$ 640	\$ 256	\$ 1,280
TOTAL - MARINE CABLE :							\$ 83,811,284	\$ 105,456,021	\$ 71,430,310	\$ 260,697,615
2. TRANSITION STATION										
2.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,094	\$ 14,063	\$ 35,156
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	2,600	LF	7.50	5.25	2.25	\$ 19,500	\$ 13,650	\$ 5,850	\$ 39,000
2.4	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.5	Splice Vault Excavation	3,186	CY		\$ 17.5	\$ 7.5	\$ -	\$ 55,751	\$ 23,893	\$ 79,644
2.6	Splice Vault Supply & Installation	8	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 560,000	\$ 180,000	\$ 420,000	\$ 1,160,000
2.7	Splice Vault Backfill	956	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,380	\$ 5,734	\$ 19,115
2.8	Air Test Ducts	7,680	LF			\$ 0.25	\$ -	\$ -	\$ 1,920	\$ 1,920
2.9	Restoration (incl. Paving)	38,000	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 532,000	\$ 532,000	\$ 266,000	\$ 1,330,000
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	0	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill	3,212	CY		\$ 24.5	\$ 10.5	\$ -	\$ 78,698	\$ 33,728	\$ 112,426
2.15	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	4,798	CF		\$ 1.0	\$ 0.5	\$ -	\$ 4,798	\$ 2,399	\$ 7,196
2.20							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 1,111,500	\$ 1,104,004	\$ 1,062,536	\$ 3,278,040
AS 5.6a. Shore Road to New Rochelle Offshore Submarine Cables - Four lines (2 lines per Circuit)							\$ 84,922,784	\$ 106,560,025	\$ 72,492,846	\$ 263,975,655
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,639,756.55		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		10,559,026.20		\$ -	\$ 10,559,026	\$ -	\$ 10,559,026
3.4	Utility PM and Project Oversight	1.0	LS		2,639,756.55		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.5	Site Accommodation, Facilities, Storage	1.0	LS	2,639,756.55			\$ 2,639,757	\$ -	\$ -	\$ 2,639,757
	Engineering									
3.6	Design Engineering	1	LS		\$ 13,198,783		\$ -	\$ 13,198,783	\$ -	\$ 13,198,783
3.7	Surveying/Staking	1	LS		\$ 1,847,830		\$ -	\$ 1,847,830	\$ -	\$ 1,847,830
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 80,000		\$ -	\$ 80,000	\$ -	\$ 80,000
3.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,639,757		\$ -	\$ 2,639,757	\$ -	\$ 2,639,757
3.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
3.12	Warranties / LOC's	1	LS		\$ 791,927		\$ -	\$ 791,927	\$ -	\$ 791,927
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS			\$ 238,175	\$ -	\$ -	\$ 238,175	\$ 238,175
3.15	Legal Fees (Real estate)	1.00	LS		-	7,145.25	\$ -	\$ -	\$ 7,145	\$ 7,145
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Bonds	1	LS			\$ 9,320,000	\$ -	\$ -	\$ 9,320,000	\$ 9,320,000
3.18	Sales Tax on Materials	8.8%	LS	\$ 84,922,784			\$ 7,473,205	\$ -	\$ -	\$ 7,473,205
3.19	Contractor Permits	1	LS		\$ 263,976		\$ -	\$ 263,976	\$ -	\$ 263,976
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,112,962	\$ 39,600,811	\$ 15,565,320	\$ 65,279,093

Propel NY - TO51 AS5

AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)

Total: \$ 110,456,330

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 817,488	\$ 3,256,333	\$ 1,206,355	\$ 5,280,176
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 7,146,397	\$ 7,446,220	\$ 4,393,625	\$ 18,986,243
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 19,201,491	\$ 11,343,214	\$ 7,301,746	\$ 37,846,451
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 3,033,414	\$ 9,820,361	\$ 3,039,238	\$ 15,893,013
SUBTOTAL (Costs):	\$ 30,198,790	\$ 31,866,128	\$ 15,940,964	\$ 78,005,883
CONTRACTOR MARK-UP (OH&P)	\$ 5,435,782	\$ 5,735,903	\$ 2,869,374	\$ 14,041,059
SUBTOTAL:	\$ 35,634,573	\$ 37,602,031	\$ 18,810,338	\$ 92,046,942
CONTINGENCY ON ENTIRE PROJECT	\$ 7,126,915	\$ 7,520,406	\$ 3,762,068	\$ 18,409,388
TOTAL:	\$ 42,761,487	\$ 45,122,437	\$ 22,572,405	\$ 110,456,330

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

New Rochelle Landing to New Rochelle Station segment is 1.66 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.66	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,162,000	\$ 498,000	\$ 1,660,000
1.3	Flaggers	120	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 192,000	\$ 576,000	\$ 192,000	\$ 960,000
1.4	K Rail / Lane Control / Metal Plates	8,765	LF	\$ 60	\$ 36	\$ 24	\$ 525,888	\$ 315,533	\$ 210,355	\$ 1,051,776
1.5	Police Support	7,200.0	HR		\$ 120	\$ 27	\$ -	\$ 864,000	\$ 194,400	\$ 1,058,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	1.66	Mile	\$ 60,000	\$ 180,000	\$ 60,000	\$ 99,600	\$ 298,800	\$ 99,600	\$ 498,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 817,488	\$ 3,256,333	\$ 1,206,355	\$ 5,280,176
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y57- Line 1&2										
2.1	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.2	Formwork in Trench	68,998	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 137,997	\$ 103,498	\$ 34,499	\$ 275,994
2.3	Trench Excavation	5,106	CY		\$ 17.5	\$ 7.5	\$ -	\$ 89,353	\$ 38,294	\$ 127,647
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	532	CY	\$ 50	\$ 25	\$ 14	\$ 26,593	\$ 13,031	\$ 7,446	\$ 47,070
2.5	Supply & Install Thermal Backfill -conduit level	4,692	CY	\$ 350	\$ 245	\$ 105	\$ 1,642,330	\$ 1,149,631	\$ 492,699	\$ 3,284,659
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,640	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 328,030	\$ 205,019	\$ 82,007	\$ 615,056
2.9	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.10	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.11	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.12	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.13	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.14	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.16	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,409	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 61,733	\$ 61,733	\$ 30,866	\$ 154,332
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,225	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,412	\$ 28,783	\$ 12,336	\$ 68,531
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	16	EA		\$ 400	\$ 1,200	\$ -	\$ 6,561	\$ 19,682	\$ 26,242
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	16	EA		\$ 10	\$ 15	\$ -	\$ 164	\$ 246	\$ 410
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	47	EA		\$ 400	\$ 1,200	\$ -	\$ 18,769	\$ 56,308	\$ 75,078
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.26	Excess Materials Disposal to Certified Backfill	7,347	CY		\$ 24.5	\$ 10.5	\$ -	\$ 180,012	\$ 77,148	\$ 257,161
2.27	Rock Excavation and Removal	3,924	CY		\$ 243	\$ 162	\$ -	\$ 953,513	\$ 635,675	\$ 1,589,188
2.28	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	5,886	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,886	\$ 2,943	\$ 8,829
LINE Y58-Line 1 & 2										
2.30	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.31	Formwork in Trench	68,998	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 137,997	\$ 103,498	\$ 34,499	\$ 275,994
2.32	Trench Excavation	5,106	CY		\$ 17.5	\$ 7.5	\$ -	\$ 89,353	\$ 38,294	\$ 127,647
2.33	Supply & Install 6" Sand Bedding for direct bury conduits	532	CY	\$ 50	\$ 25	\$ 14	\$ 26,593	\$ 13,031	\$ 7,446	\$ 47,070
2.34	Supply & Install Thermal Backfill -conduit level	4,692	CY	\$ 350	\$ 245	\$ 105	\$ 1,642,330	\$ 1,149,631	\$ 492,699	\$ 3,284,659
2.35	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.36	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.37	Supply & Install Ductbank Concrete	1,640	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 328,030	\$ 205,019	\$ 82,007	\$ 615,056
2.38	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.39	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.40	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.41	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.42	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.43	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500
2.44	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.45	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.46	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.47	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.48	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.49	PVMT, ASPHALT, 2" SURFACE COURSE	4,409	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 61,733	\$ 61,733	\$ 30,866	\$ 154,332
2.50	PVMT, AGGREGATE, 10", BASE COURSE	1,225	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,412	\$ 28,783	\$ 12,336	\$ 68,531
2.51	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	16	EA		\$ 400	\$ 1,200	\$ -	\$ 6,561	\$ 19,682	\$ 26,242
2.52	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	16	EA		\$ 10	\$ 15	\$ -	\$ 164	\$ 246	\$ 410
2.53	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	47	EA		\$ 400	\$ 1,200	\$ -	\$ 18,769	\$ 56,308	\$ 75,078
2.54	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.55	Excess Materials Disposal to Certified Backfill	7,347	CY		\$ 24.5	\$ 10.5	\$ -	\$ 180,012	\$ 77,148	\$ 257,161
2.56	Rock Excavation and Removal	3,924	CY		\$ 243	\$ 162	\$ -	\$ 953,513	\$ 635,675	\$ 1,589,188
2.57	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.58	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.59	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.60	Excavated material - stockpile management	5,886	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,886	\$ 2,943	\$ 8,829
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 7,146,397	\$ 7,446,220	\$ 4,393,625	\$ 18,986,243
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Y57 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.2	Y57 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.3	Y57 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y57 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.5	Y57 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.6	Y57 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Y58 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.8	Y58 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.9	Y58 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.10	Y58 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
3.11	Y58 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.12	Y58 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.13	Link Box & MH racking	8	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 212,004	\$ 148,403	\$ 63,601	\$ 424,007
3.14	Fiber Optic Cable	36,812	FT	\$ 7	\$ 3	\$ 2	\$ 272,300	\$ 122,607	\$ 81,738	\$ 476,644
3.15	Ground Continuity Conductor	36,812	FT	\$ 13	\$ 8	\$ 5	\$ 479,994	\$ 277,085	\$ 184,723	\$ 941,802
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 19,201,491	\$ 11,343,214	\$ 7,301,746	\$ 37,846,451
AS 5.6a. Shore Road to New Rochelle Onshore UG Cables - Four lines (2 lines per Circuit)							\$ 27,165,376	\$ 22,045,767	\$ 12,901,726	\$ 62,112,869
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,048,425	\$ 698,950	\$ -	\$ 1,048,425	\$ 698,950	\$ 1,747,375
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		621,128.69		\$ -	\$ 621,129	\$ -	\$ 621,129
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,484,514.78		\$ -	\$ 2,484,515	\$ -	\$ 2,484,515
4.4	Utility PM and Project Oversight	1.0	LS		621,128.69		\$ -	\$ 621,129	\$ -	\$ 621,129
4.5	Site Accommodation, Facilities, Storage	1.0	LS	621,128.69			\$ 621,129	\$ -	\$ -	\$ 621,129
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,105,643	\$ -	\$ -	\$ 3,105,643	\$ -	\$ 3,105,643
4.7	LiDAR /GPR	1.0	LS		\$ 111,803	\$ 74,535	\$ -	\$ 111,803	\$ 74,535	\$ 186,339
4.8	Geotech	2.0	Location		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 434,790		\$ -	\$ 434,790	\$ -	\$ 434,790
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 80,000		\$ -	\$ 80,000	\$ -	\$ 80,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 621,129		\$ -	\$ 621,129	\$ -	\$ 621,129
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 186,339		\$ -	\$ 186,339	\$ -	\$ 186,339
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,200,000	\$ -	\$ -	\$ 2,200,000	\$ 2,200,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 27,165,376.31			\$ 2,412,285	\$ -	\$ -	\$ 2,412,285
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 62,113	\$ -	\$ -	\$ 62,113	\$ 62,113
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 3,033,414	\$ 9,820,361	\$ 3,039,238	\$ 15,893,013

Propel NY - TO51 AS5

AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit

Total: \$ 333,103,631

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,286,976	\$ 11,600,426	\$ 4,444,950	\$ 18,332,352
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 22,313,345	\$ 28,290,112	\$ 22,106,350	\$ 72,709,807
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 48,809,874	\$ 29,550,805	\$ 18,559,479	\$ 96,920,158
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 8,398,449	\$ 29,274,567	\$ 9,607,345	\$ 47,280,360
SUBTOTAL (Costs):	\$ 81,808,644	\$ 98,715,909	\$ 54,718,124	\$ 235,242,678
CONTRACTOR MARK-UP (OH&P)	\$ 14,725,556	\$ 17,768,864	\$ 9,849,262	\$ 42,343,682
SUBTOTAL:	\$ 96,534,200	\$ 116,484,773	\$ 64,567,387	\$ 277,586,359
CONTINGENCY ON ENTIRE PROJECT	\$ 19,306,840	\$ 23,296,955	\$ 12,913,477	\$ 55,517,272
TOTAL:	\$ 115,841,040	\$ 139,781,728	\$ 77,480,864	\$ 333,103,631

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.14	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,698,000	\$ 2,442,000	\$ 8,140,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	42,979	LF	\$ 30	\$ 18	\$ 12	\$ 1,289,376	\$ 773,626	\$ 515,750	\$ 2,578,752
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ 2,016,000	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	8.14	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 325,600	\$ 976,800	\$ 325,600	\$ 1,628,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,286,976	\$ 11,600,426	\$ 4,444,950	\$ 18,332,352
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.14	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,137,972	\$ 758,648	\$ 1,896,620
2.2	Formwork in Trench	329,402	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 658,803	\$ 494,102	\$ 164,701	\$ 1,317,606
2.3	Trench Excavation	24,376	CY		\$ 17.5	\$ 7.5	\$ -	\$ 426,575	\$ 182,818	\$ 609,393
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,539	CY	\$ 50	\$ 25	\$ 14	\$ 126,957	\$ 62,209	\$ 35,548	\$ 224,714
2.5	Supply & Install Thermal Backfill -conduit level	22,402	CY	\$ 350	\$ 245	\$ 105	\$ 7,840,559	\$ 5,488,391	\$ 2,352,168	\$ 15,681,117
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	7,830	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,566,030	\$ 978,769	\$ 391,508	\$ 2,936,306
2.8	Conduit 8" HDPE	257,875	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,296,757	\$ 1,462,152	\$ 626,637	\$ 7,385,546
2.9	Conduit 4" HDPE	85,958	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 461,597	\$ 361,025	\$ 154,725	\$ 977,347
2.10	Conduit 2" HDPE	85,958	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 164,181	\$ 270,769	\$ 116,044	\$ 550,993
2.11	Warning Tape	42,979	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,447	\$ 10,745	\$ 4,298	\$ 21,490
2.12	Trench Box Shoring (Vault)	80	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,446,328	\$ 2,169,492	\$ 3,615,819
2.13	Splice Vault Excavation	15,600	CY		\$ 17.5	\$ 7.5	\$ -	\$ 273,000	\$ 117,000	\$ 390,000
2.14	Splice Vault Supply & Installation	80	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,800,000	\$ 1,320,000	\$ 3,080,000	\$ 7,200,000
2.15	Splice Vault Backfill	4,680	CY		\$ 14.0	\$ 6.0	\$ -	\$ 65,520	\$ 28,080	\$ 93,600
2.16	Jack and Bore along Route	310	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 496,000	\$ 992,000	\$ 992,000	\$ 2,480,000
2.17	HDD along Route	1,494	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 2,390,400	\$ 4,780,800	\$ 4,780,800	\$ 11,952,000
2.18	Air Test Ducts	429,792	LF			\$ 0.25	\$ -	\$ -	\$ 107,448	\$ 107,448
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	25,010	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 350,138	\$ 350,138	\$ 175,069	\$ 875,345
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,947	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 155,478	\$ 163,252	\$ 69,965	\$ 388,695
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	78	EA		\$ 400	\$ 1,200	\$ -	\$ 31,321	\$ 93,962	\$ 125,282
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	78	EA		\$ 10	\$ 15	\$ -	\$ 783	\$ 1,175	\$ 1,958
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	224	EA		\$ 400	\$ 1,200	\$ -	\$ 89,606	\$ 268,819	\$ 358,426
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 444,444	\$ 296,296	\$ -	\$ 444,444	\$ 296,296	\$ 740,740
2.24	Excess Materials Disposal to Certified Backfill	45,884	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,124,169	\$ 481,787	\$ 1,605,955

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.25	Rock Excavation and Removal	26,650	CY		\$ 243	\$ 162	\$ -	\$ 6,476,066	\$ 4,317,378	\$ 10,793,444
2.26	Dewatering	80	EA			\$ 4,000	\$ -	\$ -	\$ 320,000	\$ 320,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	39,976	CF		\$ 1.0	\$ 0.5	\$ -	\$ 39,976	\$ 19,988	\$ 59,964
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 22,313,345	\$ 28,290,112	\$ 22,106,350	\$ 72,709,807
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.13	Link Box & MH racking	80	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,120,036	\$ 1,484,025	\$ 636,011	\$ 4,240,072
3.14	Fiber Optic Cable	90,256	FT	\$ 7	\$ 3	\$ 2	\$ 667,626	\$ 300,608	\$ 200,405	\$ 1,168,639
3.15	Ground Continuity Conductor	90,256	FT	\$ 13	\$ 8	\$ 5	\$ 1,176,852	\$ 679,359	\$ 452,906	\$ 2,309,118
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 48,809,874	\$ 29,550,805	\$ 18,559,479	\$ 96,920,158
AS 5.6b. New Rochelle to Sprainbrook 345kV Onshore UG Cables -double circuit							\$ 73,410,195	\$ 69,441,342	\$ 45,110,780	\$ 187,962,317
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,436,564	\$ 2,291,042	\$ -	\$ 3,436,564	\$ 2,291,042	\$ 5,727,606
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,879,623.17		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		7,518,492.68		\$ -	\$ 7,518,493	\$ -	\$ 7,518,493
4.4	Utility PM and Project Oversight	1.0	LS		1,879,623.17		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,879,623.17			\$ 1,879,623	\$ -	\$ -	\$ 1,879,623
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 9,398,116	\$ -	\$ -	\$ 9,398,116	\$ -	\$ 9,398,116
4.7	LiDAR /GPR	1.0	LS		\$ 338,332	\$ 225,555	\$ -	\$ 338,332	\$ 225,555	\$ 563,887
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 1,315,736		\$ -	\$ 1,315,736	\$ -	\$ 1,315,736
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,879,623		\$ -	\$ 1,879,623	\$ -	\$ 1,879,623
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 563,887		\$ -	\$ 563,887	\$ -	\$ 563,887
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 219,811	\$ -	\$ -	\$ 219,811	\$ 219,811
4.16	Legal Fees (Real estate)	1.00	LS		-	6,594.33	\$ -	\$ -	\$ 6,594	\$ 6,594
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 6,660,000	\$ -	\$ -	\$ 6,660,000	\$ 6,660,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 73,410,195.24			\$ 6,518,825	\$ -	\$ -	\$ 6,518,825
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 187,962	\$ -	\$ -	\$ 187,962	\$ 187,962
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 8,398,449	\$ 29,274,567	\$ 9,607,345	\$ 47,280,360

Propel NY - TO51 AS5

AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit

Total: \$ 202,306,242

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579
SUBTOTAL (Costs):	\$ 48,389,256	\$ 63,543,409	\$ 30,938,976	\$ 142,871,640
CONTRACTOR MARK-UP (OH&P)	\$ 8,710,066	\$ 11,437,814	\$ 5,569,016	\$ 25,716,895
SUBTOTAL:	\$ 57,099,322	\$ 74,981,222	\$ 36,507,991	\$ 168,588,535
CONTINGENCY ON ENTIRE PROJECT	\$ 11,419,864	\$ 14,996,244	\$ 7,301,598	\$ 33,717,707
TOTAL:	\$ 68,519,186	\$ 89,977,467	\$ 43,809,589	\$ 202,306,242

Description of Work: The proposed 138 kV electric underground transmission line begins at the Syosset Substation in the Hamlet of Woodbury in the Town of Oyster Bay in Nassau County leading to the Shore Road Substation in the Hamlet of Glenwood Landing in the Town of Oyster Bay in Nassau County. The proposed route will be approximately 11.3 miles, utilizing 4000 kcmil XLPE cable

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,875,000	\$ 3,375,000	\$ 11,250,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	59,400	LF	\$ 30	\$ 18	\$ 12	\$ 1,782,000	\$ 1,069,200	\$ 712,800	\$ 3,564,000
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 450,000	\$ 1,350,000	\$ 450,000	\$ 2,250,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,572,750	\$ 1,048,500	\$ 2,621,250
2.2	Formwork in Trench	467,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 934,512	\$ 700,884	\$ 233,628	\$ 1,869,024
2.3	Trench Excavation	35,996	CY		\$ 17.5	\$ 7.5	\$ -	\$ 629,930	\$ 269,970	\$ 899,900
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,250	SF	\$ 50	\$ 25	\$ 14	\$ 112,488	\$ 55,119	\$ 31,497	\$ 199,103
2.5	Supply & Install Thermal Backfill	20,897	CY	\$ 350	\$ 245	\$ 105	\$ 7,313,854	\$ 5,119,698	\$ 2,194,156	\$ 14,627,709
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,222	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,644,482	\$ 1,027,801	\$ 411,120	\$ 3,083,403
2.9	Conduit 6" HDPE	178,200	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,888,920	\$ 1,010,394	\$ 433,026	\$ 3,332,340
2.10	Conduit 4" HDPE	59,400	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 318,978	\$ 249,480	\$ 106,920	\$ 675,378
2.11	Conduit 2" HDPE	59,400	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 113,454	\$ 187,110	\$ 80,190	\$ 380,754
2.12	Warning Tape	59,400	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,910	\$ 14,850	\$ 5,940	\$ 29,700
2.13	Trench Box Shoring (Vault)	33	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 596,610	\$ 894,915	\$ 1,491,525
2.14	Splice Vault Excavation	5,990	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,827	\$ 44,926	\$ 149,753
2.15	Splice Vault Supply & Installation	33	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,155,000	\$ 544,500	\$ 1,270,500	\$ 2,970,000
2.16	Splice Vault Backfill	1,797	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,158	\$ 10,782	\$ 35,941
2.17	Jack and Bore along Route	168	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 134,400	\$ 268,800	\$ 268,800	\$ 672,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	297,000	LF			\$ 0.25	\$ -	\$ -	\$ 74,250	\$ 74,250
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 299,187	\$ 299,187	\$ 149,594	\$ 747,968
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,936	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 132,853	\$ 139,496	\$ 59,784	\$ 332,133
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	82	EA		\$ 400	\$ 1,200	\$ -	\$ 32,890	\$ 98,669	\$ 131,559

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	82	EA		\$ 10	\$ 15	\$ -	\$ 822	\$ 1,233	\$ 2,056
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	209	EA		\$ 400	\$ 1,200	\$ -	\$ 83,587	\$ 250,761	\$ 334,348
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 614,250	\$ 409,500	\$ -	\$ 614,250	\$ 409,500	\$ 1,023,750
2.26	Excess Materials Disposal to Certified Backfill	52,246	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,280,023	\$ 548,581	\$ 1,828,604
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	33	EA			\$ 4,000	\$ -	\$ -	\$ 132,000	\$ 132,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,986	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,986	\$ 20,993	\$ 62,979
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	187,110	FT	\$ 127	\$ 76	\$ 51	\$ 23,762,970	\$ 14,257,782	\$ 9,505,188	\$ 47,525,940
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	99	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 583,902	\$ 974,802	\$ 278,515	\$ 1,837,218
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	33	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 879,747	\$ 527,848	\$ 351,899	\$ 1,759,494
3.11	Fiber Optic Cable	62,370	FT	\$ 7	\$ 3	\$ 2	\$ 461,351	\$ 207,730	\$ 138,486	\$ 807,567
3.12	Ground Continuity Conductor	62,370	FT	\$ 13	\$ 8	\$ 5	\$ 813,242	\$ 469,459	\$ 312,973	\$ 1,595,674
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
AS 5.7. Syosset to Shore Road 138kV Onshore UG Cables -single circuit							\$ 43,400,234	\$ 44,927,052	\$ 25,180,776	\$ 113,508,061
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,103,235	\$ 1,402,157	\$ -	\$ 2,103,235	\$ 1,402,157	\$ 3,505,391
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,540,322.45		\$ -	\$ 4,540,322	\$ -	\$ 4,540,322
4.4	Utility PM and Project Oversight	1.0	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,135,080.61			\$ 1,135,081	\$ -	\$ -	\$ 1,135,081
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,675,403	\$ -	\$ -	\$ 5,675,403	\$ -	\$ 5,675,403
4.7	LiDAR /GPR	1.0	LS		\$ 204,315	\$ 136,210	\$ -	\$ 204,315	\$ 136,210	\$ 340,524
4.8	Geotech	12.0	Location		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 794,556		\$ -	\$ 794,556	\$ -	\$ 794,556
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,135,081		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 340,524		\$ -	\$ 340,524	\$ -	\$ 340,524
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 43,190	\$ -	\$ -	\$ 43,190	\$ 43,190
4.16	Legal Fees (Real estate)	1.00	LS		-	1,295.70	\$ -	\$ -	\$ 1,296	\$ 1,296
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,040,000	\$ -	\$ -	\$ 4,040,000	\$ 4,040,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 43,400,234.15			\$ 3,853,941	\$ -	\$ -	\$ 3,853,941
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 113,508	\$ -	\$ -	\$ 113,508	\$ 113,508
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579

Propel NY - TO51 AS5

AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit

Total: \$ 51,165,266

Propel NY - TO51 AS5				
	Material Supply	Labor Supply	Equip Supply	Total
AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 749,760	\$ 3,808,856	\$ 1,456,104	\$ 6,014,720
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,480,256	\$ 3,823,602	\$ 2,546,068	\$ 9,849,926
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 6,286,545	\$ 3,941,373	\$ 2,515,051	\$ 12,742,969
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,219,947	\$ 4,841,405	\$ 1,464,696	\$ 7,526,048
SUBTOTAL (Costs):	\$ 11,736,508	\$ 16,415,236	\$ 7,981,918	\$ 36,133,662
CONTRACTOR MARK-UP (OH&P)	\$ 2,112,571	\$ 2,954,742	\$ 1,436,745	\$ 6,504,059
SUBTOTAL:	\$ 13,849,080	\$ 19,369,978	\$ 9,418,664	\$ 42,637,722
CONTINGENCY ON ENTIRE PROJECT	\$ 2,769,816	\$ 3,873,996	\$ 1,883,733	\$ 8,527,544
TOTAL:	\$ 16,618,896	\$ 23,243,974	\$ 11,302,396	\$ 51,165,266

Description of Work: Replace the existing circuit utilized as part of the 2-cable circuit with an additional 2.6-mile underground 138 KV transmission circuit to match the ratings of the existing aerial portions of the transmission circuit. (Upgraded circuit from Greenlawn to Syosset Transition).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.65	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,855,000	\$ 795,000	\$ 2,650,000
1.3	Flaggers	140	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 224,000	\$ 672,000	\$ 224,000	\$ 1,120,000
1.4	K Rail / Lane Control / Metal Plates	13,992	LF	\$ 30	\$ 18	\$ 12	\$ 419,760	\$ 251,856	\$ 167,904	\$ 839,520
1.5	Police Support	5,600.0	HR		\$ 120	\$ 27	\$ -	\$ 672,000	\$ 151,200	\$ 823,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	2.65	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 106,000	\$ 318,000	\$ 106,000	\$ 530,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 749,760	\$ 3,808,856	\$ 1,456,104	\$ 6,014,720
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	2.65	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 370,470	\$ 246,980	\$ 617,450
2.2	Formwork in Trench	107,936	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 215,872	\$ 161,904	\$ 53,968	\$ 431,744
2.3	Trench Excavation	8,315	CY		\$ 17.5	\$ 7.5	\$ -	\$ 145,514	\$ 62,363	\$ 207,877
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	520	SF	\$ 50	\$ 25	\$ 14	\$ 25,985	\$ 12,732	\$ 7,276	\$ 45,993
2.5	Supply & Install Thermal Backfill	4,827	CY	\$ 350	\$ 245	\$ 105	\$ 1,689,498	\$ 1,182,649	\$ 506,849	\$ 3,378,996
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,899	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 379,875	\$ 237,422	\$ 94,969	\$ 712,265
2.9	Conduit 6" HDPE	41,976	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 444,946	\$ 238,004	\$ 102,002	\$ 784,951
2.10	Conduit 4" HDPE	13,992	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 75,137	\$ 58,766	\$ 25,186	\$ 159,089
2.11	Conduit 2" HDPE	13,992	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 26,725	\$ 44,075	\$ 18,889	\$ 89,689
2.12	Warning Tape	13,992	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 2,099	\$ 3,498	\$ 1,399	\$ 6,996
2.13	Trench Box Shoring (Vault)	8	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 144,633	\$ 216,949	\$ 361,582
2.14	Splice Vault Excavation	1,452	CY		\$ 17.5	\$ 7.5	\$ -	\$ 25,413	\$ 10,891	\$ 36,304
2.15	Splice Vault Supply & Installation	8	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 280,000	\$ 132,000	\$ 308,000	\$ 720,000
2.16	Splice Vault Backfill	436	CY		\$ 14.0	\$ 6.0	\$ -	\$ 6,099	\$ 2,614	\$ 8,713
2.17	Jack and Bore along Route	300	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 240,000	\$ 480,000	\$ 480,000	\$ 1,200,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	69,960	LF			\$ 0.25	\$ -	\$ -	\$ 17,490	\$ 17,490
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,952	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 69,333	\$ 69,333	\$ 34,667	\$ 173,333

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,376	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 30,787	\$ 32,327	\$ 13,854	\$ 76,968
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	19	EA		\$ 400	\$ 1,200	\$ -	\$ 7,597	\$ 22,792	\$ 30,390
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	19	EA		\$ 10	\$ 15	\$ -	\$ 190	\$ 285	\$ 475
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	48	EA		\$ 400	\$ 1,200	\$ -	\$ 19,309	\$ 57,926	\$ 77,234
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 144,690	\$ 96,460	\$ -	\$ 144,690	\$ 96,460	\$ 241,150
2.26	Excess Materials Disposal to Certified Backfill	12,131	CY		\$ 24.5	\$ 10.5	\$ -	\$ 297,211	\$ 127,376	\$ 424,587
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	8	EA			\$ 4,000	\$ -	\$ -	\$ 32,000	\$ 32,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	9,767	CF		\$ 1.0	\$ 0.5	\$ -	\$ 9,767	\$ 4,884	\$ 14,651
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,480,256	\$ 3,823,602	\$ 2,546,068	\$ 9,849,926
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	44,075	FT	\$ 127	\$ 76	\$ 51	\$ 5,597,500	\$ 3,358,500	\$ 2,239,000	\$ 11,194,999
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	24	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 141,552	\$ 236,316	\$ 67,519	\$ 445,386
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT		\$ 94	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT		\$ 94	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	8	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 213,272	\$ 127,963	\$ 85,309	\$ 426,544
3.11	Fiber Optic Cable	14,692	FT	\$ 7	\$ 3	\$ 2	\$ 108,674	\$ 48,932	\$ 32,621	\$ 190,227
3.12	Ground Continuity Conductor	14,692	FT	\$ 13	\$ 8	\$ 5	\$ 191,564	\$ 110,584	\$ 73,722	\$ 375,870
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 6,286,545	\$ 3,941,373	\$ 2,515,051	\$ 12,742,969
AS5.8. Syosset to Greenlawn 138kV Onshore UG Cables -single circuit							\$ 10,516,561	\$ 11,573,831	\$ 6,517,223	\$ 28,607,615
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 542,732	\$ 361,821	\$ -	\$ 542,732	\$ 361,821	\$ 904,553
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		286,076.15		\$ -	\$ 286,076	\$ -	\$ 286,076
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		1,144,304.60		\$ -	\$ 1,144,305	\$ -	\$ 1,144,305
4.4	Utility PM and Project Oversight	1.0	LS		286,076.15		\$ -	\$ 286,076	\$ -	\$ 286,076
4.5	Site Accommodation, Facilities, Storage	1.0	LS	286,076.15			\$ 286,076	\$ -	\$ -	\$ 286,076
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,430,381	\$ -	\$ -	\$ 1,430,381	\$ -	\$ 1,430,381
4.7	LiDAR /GPR	1.0	LS		\$ 51,494	\$ 34,329	\$ -	\$ 51,494	\$ 34,329	\$ 85,823
4.8	Geotech	3.0	Location		2,730.00	1,820.00	\$ -	\$ 8,190	\$ 5,460	\$ 13,650
4.9	Surveying/Staking	1	LS		\$ 200,253		\$ -	\$ 200,253	\$ -	\$ 200,253
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 286,076		\$ -	\$ 286,076	\$ -	\$ 286,076
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 85,823		\$ -	\$ 85,823	\$ -	\$ 85,823
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 14,056	\$ -	\$ -	\$ 14,056	\$ 14,056
4.16	Legal Fees (Real estate)	1.00	LS		-	421.68	\$ -	\$ -	\$ 422	\$ 422
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,020,000	\$ -	\$ -	\$ 1,020,000	\$ 1,020,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 10,516,561.35			\$ 933,871	\$ -	\$ -	\$ 933,871
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 28,608	\$ -	\$ -	\$ 28,608	\$ 28,608
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,219,947	\$ 4,841,405	\$ 1,464,696	\$ 7,526,048

Propel NY - TO51 AS5	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO51 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1 Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project (expect East Garden City station) only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
21	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
22	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
23	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
24	The trench excavation width and depth assumed details are shown in each tab.
25	The MH counts are based on our field and desktop review
26	Assumes that 30% of native spoils from vault excavation will be used as backfill.
27	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
28	Assumed asphalt paving repair includes a 2" surfacing course pavement
29	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
30	All Tline segments construction period is based on the provided milestone schedule.
31	Shore Road to Sprainbrook 345kv UG line, assume Shore Road to New Rochelle is 4-circuit, New Rochelle to Sprainbrook is 2 -circuit.
32	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 1 circuits, 2 cable per circuit, so there are 2 passes.
33	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
33	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
34	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
35	Substation pad is based on 8" base and 6" surfacing rock.
36	The firewalls for transformers/PAR/Reactors are assumed 30' tall, if required
37	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
38	Costs for precast concrete piles (12"x80') were included in several substations by developer, there are no drawings nor geo technical report to verify if it is required and the quantities. We assumed it is required and included the costs based on developer's quantities.
39	The control panels quantities and values are provided by Sub Station Engineers.

Propel NY - TO53 AS7		
REVISION: 1		
Propel NY - TO53 AS7 -DIRECT COST		
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	1 - New Rochelle 345kV Substation	\$ 5,189,956
Direct Labor, Material & Equipment Costs	2 - Shore Road 345 kV Substation	\$ 23,199,414
Direct Labor, Material & Equipment Costs	3 - Ruland Road 345/138 kV Substation	\$ 73,584,516
Direct Labor, Material & Equipment Costs	4 - New 345/138 kV Eastern Queens Substation	\$ 146,275,876
Direct Labor, Material & Equipment Costs	5 - Barrett 345 kV Substation	\$ 94,323,411
Direct Labor, Material & Equipment Costs	6- Sprain Brook HVDC Converter Station	\$ 319,934,144
Direct Labor, Material & Equipment Costs	7 - New Northport HVDC Converter Station	\$ 307,222,530
Direct Labor, Material & Equipment Costs	8 - New Northport 345/138 kV Substation	\$ 102,988,613
Direct Labor, Material & Equipment Costs	9 - Existing EGC 345 kV_ Upgrade	\$ 7,358,978
Direct Labor, Material & Equipment Costs	10 - Existing 345 kV Tremont Substation_ GIS_ Interconnection	\$ 21,413,864
Direct Labor, Material & Equipment Costs	11 - Existing Sprain Brook 345 kV_ Interconnection	\$ 19,288,048
Direct Labor, Material & Equipment Costs	12 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 7,291,825
Direct Labor, Material & Equipment Costs	13 -Existing Shore Road 138 kV_ Interconnection	\$ 9,362,353
Direct Labor, Material & Equipment Costs	14 -Existing Syosset 138 kV_ Interconnection	\$ 12,405,013
Direct Labor, Material & Equipment Costs	15 - Existing Dunwoodie 345 kV_ Interconnection	\$ 4,249,613
Direct Labor, Material & Equipment Costs	16 -Existing Holbrook 138 Kv_ Upgrade	\$ 1,013,645
Direct Labor, Material & Equipment Costs	17 -Existing Barrett 138 Kv_ Upgrade	\$ -
Direct Labor, Material & Equipment Costs	18 - Existing EGC 138 kV_ Upgrade	\$ 9,544,442
Direct Labor, Material & Equipment Costs	19 -Existing Lake Success 138 kV_ Upgrade	\$ 12,857,454
Direct Labor, Material & Equipment Costs	20 - Existing Rainey 345 kV_ Upgrade	\$ 2,756,158
Direct Labor, Material & Equipment Costs	21 -Other Substation Upgrades	\$ 341,250
SUBTOTAL (Costs):		\$ 1,180,601,102
CONTRACTOR MARK-UP (OH&P)		\$ 131,873,280
SUBTOTAL (AFTER MU):		\$ 1,312,474,382
CONTINGENCY ON ENTIRE PROJECT		\$ 262,494,876
Substation TOTAL:		\$ 1,574,969,258
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit	\$ 317,449,703
Direct Labor, Material & Equipment Costs	AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 113,508,061
Direct Labor, Material & Equipment Costs	AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 202,597,296
Direct Labor, Material & Equipment Costs	AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	\$ 148,375,821
Direct Labor, Material & Equipment Costs	AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 32,237,380
Direct Labor, Material & Equipment Costs	AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit	\$ 108,543,450
Direct Labor, Material & Equipment Costs	AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit	\$ 264,010,910
Direct Labor, Material & Equipment Costs	AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit	\$ 272,316,291
Direct Labor, Material & Equipment Costs	AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit	\$ 306,964,932
Direct Labor, Material & Equipment Costs	AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit	\$ 152,176,793
Direct Labor, Material & Equipment Costs	AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 11,079,982
Direct Labor, Material & Equipment Costs	AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 40,430,416
Direct Labor, Material & Equipment Costs	AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit	\$ 63,689,609
Direct Labor, Material & Equipment Costs	Other Misc. Upgrades	\$ 8,200,000
SUBTOTAL (Costs):		\$ 2,041,580,645
CONTRACTOR MARK-UP (OH&P)		\$ 367,484,516
SUBTOTAL (AFTER MU):		\$ 2,409,065,161
CONTINGENCY ON ENTIRE PROJECT		\$ 481,813,032
Transmission TOTAL:		\$ 2,890,878,193
Propel NY - TO53 AS7Total Direct Cost		\$ 4,465,847,452

Propel NY - TO53 AS7 -INDIRECT COST		
Substation Indirect Costs		Total Each Segment
Indirect Costs	1 - New Rochelle 345kV Substation	\$ 4,190,336
Indirect Costs	2 - Shore Road 345 kV Substation	\$ 7,887,702
Indirect Costs	3 - Ruland Road 345/138 kV Substation	\$ 25,072,487
Indirect Costs	4 - New 345/138 kV Eastern Queens Substation	\$ 55,633,044
Indirect Costs	5 - Barrett 345 kV Substation	\$ 40,828,541
Indirect Costs	6- Sprain Brook HVDC Converter Station	\$ 36,115,670
Indirect Costs	7 - New Northport HVDC Converter Station	\$ 28,062,931
Indirect Costs	8 - New Northport 345/138 kV Substation	\$ 27,866,635
Indirect Costs	9 - Existing EGC 345 kV_ Upgrade	\$ 12,760,863
Indirect Costs	10 - Existing 345 kV Tremont Substation_GIS_ Interconnection	\$ 3,217,283
Indirect Costs	11 - Existing Sprain Brook 345 kV_ Interconnection	\$ 3,822,420
Indirect Costs	12 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 2,322,912
Indirect Costs	13 -Existing Shore Road 138 kV_ Interconnection	\$ 3,015,951
Indirect Costs	14 -Existing Syosset 138 kV_ Interconnection	\$ 4,132,015
Indirect Costs	15 - Existing Dunwoodie 345 kV_ Interconnection	\$ 685,728
Indirect Costs	16 -Existing Holbrook 138 Kv_ Upgrade	\$ 333,220
Indirect Costs	17 -Existing Barrett 138 Kv_ Upgrade	\$ -
Indirect Costs	18 - Existing EGC 138 kV_ Upgrade	\$ 2,985,944
Indirect Costs	19 -Existing Lake Success 138 kV_ Upgrade	\$ 4,247,145
Indirect Costs	20 - Existing Rainey 345 kV_ Upgrade	\$ 903,991
Indirect Costs	21 -Other Substation Upgrades	\$ 116,339
SUBTOTAL (Costs):		\$ 264,201,157
CONTRACTOR MARK-UP (OH&P)		\$ 47,556,208
SUBTOTAL (AFTER MU):		\$ 311,757,365
CONTINGENCY ON ENTIRE PROJECT		\$ 62,351,473
Substation TOTAL:		\$ 374,108,838
Transmission Indirect Costs		Total Each Segment
Indirect Costs	AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit	\$ 80,417,599
Indirect Costs	AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 29,363,579
Indirect Costs	AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 51,255,552
Indirect Costs	AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	\$ 41,406,484
Indirect Costs	AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 8,473,490
Indirect Costs	AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit	\$ 27,372,674
Indirect Costs	AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit	\$ 65,796,610
Indirect Costs	AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit	\$ 69,675,926
Indirect Costs	AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit	\$ 71,215,375
Indirect Costs	AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit	\$ 37,863,972
Indirect Costs	AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 3,274,585
Indirect Costs	AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 10,503,551
Indirect Costs	AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit	\$ 16,606,670
Indirect Costs	Other Misc. Upgrades	\$ 2,606,000
SUBTOTAL (Costs):		\$ 515,832,068
CONTRACTOR MARK-UP (OH&P)		\$ 92,849,772
SUBTOTAL (AFTER MU):		\$ 608,681,840
CONTINGENCY ON ENTIRE PROJECT		\$ 121,736,368
Transmission TOTAL:		\$ 730,418,208
CONTINGENCY ON ENTIRE PROJECTTotal Indirect Cost		\$ 1,104,527,046
Propel NY - TO53 AS7 Total		\$ 5,570,374,498

Propel NY - TO53 AS7

1 - New Rochelle 345kV Substation

Total: \$ 13,282,494

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
1 - New Rochelle 345kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS	\$ 227,559	\$ 260,067	\$ 162,542	\$ 650,169
3. SUBSTATION STRUCTURES	\$ 280,966	\$ 288,799	\$ 189,353	\$ 759,118
4.2	\$ 527,046	\$ 163,391	\$ 70,025	\$ 760,461
5. LOW VOLTAGE & CONTROL CABLE	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH	\$ 198,230	\$ 43,314	\$ 12,044	\$ 253,588
7. GROUND GRID	\$ 56,711	\$ 40,853	\$ 9,473	\$ 107,037
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 270,692	\$ 1,145,032	\$ 2,774,612	\$ 4,190,336
SUBTOTAL (Costs):	\$ 2,756,973	\$ 2,795,584	\$ 3,827,734	\$ 9,380,292
CONTRACTOR MARK-UP (OH&P)	\$ 496,255	\$ 503,205	\$ 688,992	\$ 1,688,453
SUBTOTAL:	\$ 3,253,229	\$ 3,298,789	\$ 4,516,727	\$ 11,068,745
CONTINGENCY ON ENTIRE PROJECT	\$ 650,646	\$ 659,758	\$ 903,345	\$ 2,213,749
TOTAL:	\$ 3,903,874	\$ 3,958,547	\$ 5,420,072	\$ 13,282,494

Description of Work: New, greenfield substation to be called “New Rochelle Substation,” which would be 345 kV and located near 60 Echo Avenue in the City of New Rochelle, Westchester County. The substation would allow for the transition of electric submarine transmission cables to electric underground transmission cables at a location outside of the shoreline of Long Island Sound.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1 - New Rochelle 345kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 19,980	\$ 13,320	\$ 33,300
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	3,698	SY	4.85	7.20	4.80	\$ 17,933	\$ 26,622	\$ 17,748	\$ 62,304
1.4	Strip and Dispose Top Soil	2,985	CY		24.50	10.50	\$ -	\$ 73,124	\$ 31,339	\$ 104,463
1.5	Site Grading- Excavation for Substation Pad	8,954	CY		9.00	6.00	\$ -	\$ 80,586	\$ 53,724	\$ 134,310
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	4,835	CY		21.00	9.00	\$ -	\$ 101,538.36	\$ 43,516.44	\$ 145,054.80
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,253	CY		2.40	1.60	\$ -	\$ 17,407	\$ 11,604	\$ 29,011
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,835	CY	25.00	2.40	1.60	\$ 120,879	\$ 11,604	\$ 7,736	\$ 140,220
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	8,954	SY	11.00	6.00	4.00	\$ 98,494	\$ 53,724	\$ 35,816	\$ 188,034
1.11	Site Surfacing - Aggregate 6" Thick	8,954	SY	16.50	4.50	3.00	\$ 147,741	\$ 40,293	\$ 26,862	\$ 214,896
1.12	7" Station Fence w/ Barbed Wire & Grounding	1,285	LF	13.85	13.85	6.92	\$ 17,795	\$ 17,795	\$ 8,897	\$ 44,487
1.13	24' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	328,812.00	38,400.00	25,368.00	\$ 328,812	\$ 38,400	\$ 25,368	\$ 392,580
1.16	Seeding	25,302	SF	1.50	1.50	1.00	\$ 37,953	\$ 37,953	\$ 25,302	\$ 101,208
1.17	Erosion Control-Silt fence install & remove	2,307	LF	2.41	3.16	0.72	\$ 5,560	\$ 7,290	\$ 1,661	\$ 14,511
1.18	Temporary fencing	1,538	LF	7.50	5.25	2.25	\$ 11,535	\$ 8,075	\$ 3,461	\$ 23,070
1.19	Substation entrance with asphalt	1,085	SY	19.50	26.00	19.50	\$ 21,164	\$ 28,219	\$ 21,164	\$ 70,547
1.20	Guardrail	532	LF	24.00	32.00	24.00	\$ 12,768	\$ 17,024	\$ 12,768	\$ 42,560
1.21	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.22	Retaining Wall	1,140	LF	312.00	234.00	234.00	\$ 355,680	\$ 266,760	\$ 266,760	\$ 889,200

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,186,234	\$ 851,550	\$ 609,171	\$ 2,646,955
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	36	CY	703.89	804.44	502.78	\$ 25,072	\$ 28,654	\$ 17,909	\$ 71,635
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	33	CY	703.89	804.44	502.78	\$ 23,355	\$ 26,691	\$ 16,682	\$ 66,728
2.5	345kV, Bus support-1 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Disconnect Switch - (Double Break)	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.30	Precast Concrete Piles-12"X80'	-	EA							
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 227,559	\$ 260,067	\$ 162,542	\$ 650,169
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	2	EA	23,400.00	14,040.00	9,360.00	\$ 46,800	\$ 28,080	\$ 18,720	\$ 93,600
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.5	345kV, Bus support-1 Ph	10	EA	4,810.00	2,886.00	1,924.00	\$ 48,100	\$ 28,860	\$ 19,240	\$ 96,200
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Disconnect Switch - (Double Break)	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.14	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.19	AL. Bus Tubing, 5" SCH 80	636	LF	25.00	184.94	123.29	\$ 15,900	\$ 117,621	\$ 78,414	\$ 211,934
3.20	AL. Bus fittings	1	LS	19,080.00	19,080.00	9,540.00	\$ 19,080	\$ 19,080	\$ 9,540	\$ 47,700

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 280,966	\$ 288,799	\$ 189,353	\$ 759,118
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	\$ 244,296	\$ 49,140	\$ 21,060	\$ 314,496
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.5	345kV, Disconnect Switch - (Double Break)	3	EA	68,900.00	21,703.50	9,301.50	\$ 206,700	\$ 65,111	\$ 27,905	\$ 299,715
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	\$ 76,050	\$ 49,140	\$ 21,060	\$ 146,250
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA		11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		3,150.00	1,350.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.23	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.25	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 527,046	\$ 163,391	\$ 70,025	\$ 760,461
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	1,800	LF	5.30	1.43	0.29	\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 9,536	\$ 2,579	\$ 516	\$ 12,630
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	450	LF	11.15	10.80	5.40	\$ 5,018	\$ 4,860	\$ 2,430	\$ 12,308
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	725	LF	266.50	53.04	13.26	\$ 193,213	\$ 38,454	\$ 9,614	\$ 241,280
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 198,230	\$ 43,314	\$ 12,044	\$ 253,588
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,780	LF	2.09	3.42	1.46	\$ 12,086	\$ 19,740	\$ 8,460	\$ 40,287
7.2	Caweld, DSA, 4/0 , T, CROSS	160	EA	165.00	75.00		\$ 26,400	\$ 12,000	\$ -	\$ 38,400
7.3	Ground Rod, 3/4" x 15'	135	EA	135.00	67.50	7.50	\$ 18,225	\$ 9,113	\$ 1,013	\$ 28,350
TOTAL - GROUND GRID							\$ 56,711	\$ 40,853	\$ 9,473	\$ 107,037
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (Pilot): GE L90	0	EA	41,575.50	33,260.40	8,315.10	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.7	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.8	HMI Panel	0	EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
1 - New Rochelle 345kV Substation							\$ 2,486,281	\$ 1,650,552	\$ 1,053,122	\$ 5,189,956
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		94,628.62	40,555.12	\$ -	\$ 94,629	\$ 40,555	\$ 135,184
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		207,598.24		\$ -	\$ 207,598	\$ -	\$ 207,598
9.4	Utility PM and Project Oversight	1.0	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.5	Site Accommodation, Facilities, Storage	1.0	LS	51,899.56			\$ 51,900	\$ -	\$ -	\$ 51,900
	Engineering									
9.6	Design Engineering	1.00	LS		415,196.48		\$ -	\$ 415,196	\$ -	\$ 415,196
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		36,329.69		\$ -	\$ 36,330	\$ -	\$ 36,330
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		194,623.35		\$ -	\$ 194,623	\$ -	\$ 194,623
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		51,899.56		\$ -	\$ 51,900	\$ -	\$ 51,900
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,569.87		\$ -	\$ 15,570	\$ -	\$ 15,570
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			2,393,162.00	\$ -	\$ -	\$ 2,393,162	\$ 2,393,162
9.17	Legal Fees (Real estate)	1.00	LS		-	71,794.86	\$ -	\$ -	\$ 71,795	\$ 71,795
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.8%	LS	2,486,281.16			\$ 218,793	\$ -	\$ -	\$ 218,793
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,189.96		\$ -	\$ 5,190	\$ -	\$ 5,190
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 270,692	\$ 1,145,032	\$ 2,774,612	\$ 4,190,336

Propel NY - TO53 AS7

2 - Shore Road 345 kV Substation

Total: \$ 44,019,357

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
2 - Shore Road 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,979,553	\$ 2,997,434	\$ 2,009,487	\$ 6,986,474
2. SUBSTATION FOUNDATIONS	\$ 1,967,614	\$ 1,826,216	\$ 1,292,210	\$ 5,086,040
3. SUBSTATION STRUCTURES	\$ 532,556	\$ 458,935	\$ 289,685	\$ 1,281,176
4. MAJOR EQUIPMENT	\$ 4,777,734	\$ 748,727	\$ 420,349	\$ 5,946,810
5. LOW VOLTAGE & CONTROL CABLE	\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
6. CONDUIT & CABLE TRENCH	\$ 957,512	\$ 591,799	\$ 304,206	\$ 1,853,518
7. GROUND GRID	\$ 75,011	\$ 54,328	\$ 12,708	\$ 142,047
8. CONTROL ENCLOSURE	\$ 841,656	\$ 701,803	\$ 258,853	\$ 1,802,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,218,291	\$ 5,044,983	\$ 1,624,428	\$ 7,887,702
SUBTOTAL (Costs):	\$ 12,426,211	\$ 12,444,853	\$ 6,216,052	\$ 31,087,116
CONTRACTOR MARK-UP (OH&P)	\$ 2,236,718	\$ 2,240,073	\$ 1,118,889	\$ 5,595,681
SUBTOTAL:	\$ 14,662,929	\$ 14,684,926	\$ 7,334,942	\$ 36,682,797
CONTINGENCY ON ENTIRE PROJECT	\$ 2,932,586	\$ 2,936,985	\$ 1,466,988	\$ 7,336,559
TOTAL:	\$ 17,595,515	\$ 17,621,911	\$ 8,801,930	\$ 44,019,357

Description of Work: New greenfield 345 kV Shore Road Substation, to be located at 375 Shore Road, in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. The 345 kV Shore Road Substation will serve as the transition station. A new 345 kV underground terrestrial transmission line will be converted into two (2) marine transmission lines for crossing Long Island Sound. Also, a 345 kV shunt reactor will be installed for compensation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2 - Shore Road 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,600	\$ 14,400	\$ 36,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,028	SY	4.85	7.20	4.80	\$ 9,835	\$ 14,601	\$ 9,734	\$ 34,170
1.4	Strip and Dispose Top Soil	32,267	CY		24.50	10.50	\$ -	\$ 790,533	\$ 338,800	\$ 1,129,333
1.5	Site Grading- Excavation for Substation Pad	1,613	CY		243.00	162.00	\$ -	\$ 392,040	\$ 261,360	\$ 653,400
		32,267	CY		9.00	6.00	\$ -	\$ 290,400	\$ 193,600	\$ 484,000
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	17,424	CY		21.00	9.00	\$ -	\$ 365,904.00	\$ 156,816.00	\$ 522,720.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	26,136	CY		2.40	1.60	\$ -	\$ 62,726	\$ 41,818	\$ 104,544
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	17,424	CY	25.00	2.40	1.60	\$ 435,600	\$ 41,818	\$ 27,878	\$ 505,296
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	9,680	SY	11.00	6.00	4.00	\$ 106,480	\$ 58,080	\$ 38,720	\$ 203,280
1.11	Site Surfacing - Aggregate 6" Thick	9,680	SY	16.50	4.50	3.00	\$ 159,720	\$ 43,560	\$ 29,040	\$ 232,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	972	LF	13.85	13.85	6.92	\$ 13,460	\$ 13,460	\$ 6,730	\$ 33,651
1.13	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	92,595.69	30,720.00	38,052.00	\$ 92,596	\$ 30,720	\$ 38,052	\$ 161,368
1.16	Seeding	6,320	SF	1.50	1.50	1.00	\$ 9,480	\$ 9,480	\$ 6,320	\$ 25,280
1.17	Erosion Control-Silt fence install & remove	1,545	LF	2.41	3.16	0.72	\$ 3,723	\$ 4,882	\$ 1,112	\$ 9,718
1.18	Temporary fencing	1,030	LF	7.50	5.25	2.25	\$ 7,725	\$ 5,408	\$ 2,318	\$ 15,450
1.19	Substation entrance with asphalt	222	SY	19.50	26.00	19.50	\$ 4,333	\$ 5,778	\$ 4,333	\$ 14,444
1.20	Concrete curb	180	LF	26.00	27.30	11.70	\$ 4,680	\$ 4,914	\$ 2,106	\$ 11,700

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Retaining Wall	712	LF	1,560.00	1,170.00	1,170.00	\$ 1,110,720	\$ 833,040	\$ 833,040	\$ 2,776,800
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,979,553	\$ 2,997,434	\$ 2,009,487	\$ 6,986,474
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	53	CY	703.89	804.44	502.78	\$ 37,609	\$ 42,981	\$ 26,863	\$ 107,453
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph, low	55	CY	703.89	804.44	502.78	\$ 38,925	\$ 44,486	\$ 27,803	\$ 111,214
2.4	345kV, Bus support-1 Ph	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.5	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.10	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.11	345kV, SSVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.15	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.12	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Shunt Reactor with oil containment-200MVAR	834	CY	703.89	804.44	502.78	\$ 587,040	\$ 670,903	\$ 419,314	\$ 1,677,257
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Circuit Breaker (PASS)	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.20	345/138 Kv, Control Enclosure-BLDG with generator pad	165	CY	703.89	804.44	502.78	\$ 116,141	\$ 132,733	\$ 82,958	\$ 331,832
2.21	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	Precast Firewall for transformer, PARs, reactors	16,680	SF	25.00	15.00	10.00	\$ 417,000	\$ 250,200	\$ 166,800	\$ 834,000
2.28	Precast Concrete Piles-12"X80'	104	EA	4,800.00	3,600.00	3,600.00	\$ 499,200	\$ 374,400	\$ 374,400	\$ 1,248,000
2.29	Local Control Cabinet foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,967,614	\$ 1,826,216	\$ 1,292,210	\$ 5,086,040
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	3	EA	23,400.00	14,040.00	9,360.00	\$ 70,200	\$ 42,120	\$ 28,080	\$ 140,400
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph, low	5	EA	8,346.00	5,758.74	3,839.16	\$ 41,730	\$ 28,794	\$ 19,196	\$ 89,720
3.4	345kV, Bus support-1 Ph	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.5	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.10	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.11	345kV, SSVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.12	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	345kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Cable sealing end	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.18	AL. Bus Tubing, 5" SCH 80	845	LF	25.00	184.94	123.29	\$ 21,125	\$ 156,273	\$ 104,182	\$ 281,579
3.19	AL. Bus fittings	1	LS	25,350.00	25,350.00	12,675.00	\$ 25,350	\$ 25,350	\$ 12,675	\$ 63,375
3.20	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 532,556	\$ 458,935	\$ 289,685	\$ 1,281,176
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.4	345kV, SSVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.5	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.6	345/138kV, Power Transformer	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-200MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		331,900.00	217,600.00	\$ -	\$ 331,900	\$ 217,600	\$ 549,500
4.12	345kV, Phase Angle Regulator	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	1	EA	980,000.00	57,239.00	24,531.00	\$ 980,000	\$ 57,239	\$ 24,531	\$ 1,061,770
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA		10,080.00	4,320.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	12	EA	8,450.00	5,460.00	2,340.00	\$ 101,400	\$ 65,520	\$ 28,080	\$ 195,000
4.16	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 4,777,734	\$ 748,727	\$ 420,349	\$ 5,946,810
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	14,400	LF	5.30	1.43	0.29	\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,150	LF	11.15	10.80	5.40	\$ 35,123	\$ 34,020	\$ 17,010	\$ 86,153
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	900	LF	266.50	53.04	13.26	\$ 239,850	\$ 47,736	\$ 11,934	\$ 299,520
6.7										
6.8	138kV UG- Conduit	1,100	LF	81.00	107.00	57.00	\$ 89,100	\$ 117,700	\$ 62,700	\$ 269,500
6.9	138kV UG- Cable	3,300	LF	156.00	94.00	62.00	\$ 514,800	\$ 310,200	\$ 204,600	\$ 1,029,600
6.10	138kV UG- Termination	6	EA	9,360.00	11,700.00		\$ 56,160	\$ 70,200	\$ -	\$ 126,360
6.11	Fiber Optic Cable	1,100	LF	7.40	3.33	2.22	\$ 8,137	\$ 3,664	\$ 2,442	\$ 14,243
6.12	Ground Continuity Conductor	1,100	LF	13.04	7.53	5.02	\$ 14,343	\$ 8,280	\$ 5,520	\$ 28,142
TOTAL - CONDUIT & CABLE TRENCH							\$ 957,512	\$ 591,799	\$ 304,206	\$ 1,853,518
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,760	LF	2.09	3.42	1.46	\$ 16,226	\$ 26,503	\$ 11,358	\$ 54,087
7.2	Caweld, DSA, 4/0 , T, CROSS	209	EA	165.00	75.00		\$ 34,485	\$ 15,675	\$ -	\$ 50,160
7.3	Ground Rod, 3/4" x 15'	180	EA	135.00	67.50	7.50	\$ 24,300	\$ 12,150	\$ 1,350	\$ 37,800
TOTAL - GROUND GRID							\$ 75,011	\$ 54,328	\$ 12,708	\$ 142,047
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	238,218.43	166,752.90	71,465.53	\$ 238,218	\$ 166,753	\$ 71,466	\$ 476,437
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000

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8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 841,656	\$ 701,803	\$ 258,853	\$ 1,802,312
2 - Shore Road 345 kV Substation							\$ 11,207,920	\$ 7,399,870	\$ 4,591,624	\$ 23,199,414
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		419,702.30	179,872.41	\$ -	\$ 419,702	\$ 179,872	\$ 599,575
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		927,976.58		\$ -	\$ 927,977	\$ -	\$ 927,977
9.4	Utility PM and Project Oversight	1.0	LS		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.5	Site Accommodation, Facilities, Storage	1.0	LS	231,994.14			\$ 231,994	\$ -	\$ -	\$ 231,994
	Engineering									
9.6	Design Engineering	1.00	LS		1,855,953.15		\$ -	\$ 1,855,953	\$ -	\$ 1,855,953
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		162,395.90		\$ -	\$ 162,396	\$ -	\$ 162,396
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		869,978.04		\$ -	\$ 869,978	\$ -	\$ 869,978
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		69,598.24		\$ -	\$ 69,598	\$ -	\$ 69,598
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			539,277.00	\$ -	\$ -	\$ 539,277	\$ 539,277
9.17	Legal Fees (Real estate)	1.00	LS		-	16,178.31	\$ -	\$ -	\$ 16,178	\$ 16,178
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 880,000	\$ -	\$ -	\$ 880,000	\$ 880,000
9.20	Sales Tax on Materials	8.80%	LS	11,207,920.27			\$ 986,297	\$ -	\$ -	\$ 986,297
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		23,199.41		\$ -	\$ 23,199	\$ -	\$ 23,199
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,218,291	\$ 5,044,983	\$ 1,624,428	\$ 7,887,702

Propel NY - TO53 AS7

3 - Ruland Road 345/138 kV Substation

Total: \$ 139,698,316

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,542,746	\$ 1,290,254	\$ 735,698	\$ 3,568,698
2. SUBSTATION FOUNDATIONS	\$ 5,768,874	\$ 3,276,141	\$ 2,200,338	\$ 11,245,354
3. SUBSTATION STRUCTURES	\$ 1,770,980	\$ 1,373,450	\$ 844,497	\$ 3,988,927
4. MAJOR EQUIPMENT	\$ 38,613,141	\$ 6,875,511	\$ 2,460,010	\$ 47,948,662
5. LOW VOLTAGE & CONTROL CABLE	\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
6. CONDUIT & CABLE TRENCH	\$ 1,987,196	\$ 1,276,679	\$ 613,471	\$ 3,877,347
7. GROUND GRID	\$ 287,968	\$ 209,061	\$ 49,194	\$ 546,222
8. CONTROL ENCLOSURE	\$ 902,031	\$ 773,925	\$ 247,106	\$ 1,923,062
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,244,970	\$ 15,510,257	\$ 4,317,259	\$ 25,072,487
SUBTOTAL (Costs):	\$ 56,485,023	\$ 30,684,551	\$ 11,487,429	\$ 98,657,003
CONTRACTOR MARK-UP (OH&P)	\$ 10,167,304	\$ 5,523,219	\$ 2,067,737	\$ 17,758,260
SUBTOTAL:	\$ 66,652,327	\$ 36,207,770	\$ 13,555,166	\$ 116,415,263
CONTINGENCY ON ENTIRE PROJECT	\$ 13,330,465	\$ 7,241,554	\$ 2,711,033	\$ 23,283,053
TOTAL:	\$ 79,982,792	\$ 43,449,324	\$ 16,266,199	\$ 139,698,316

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, to be located on Ruland Road in the Hamlet of Melville, Town of Huntington, Suffolk County. The New substation will consist of a 138 kV air insulated switchgear (“AIS”) five (5) position ring bus substation and a 345 kV AIS four (4) position ring bus substation interconnected by three (3) 345 kV/138 kV power transformers.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3 - Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 53,051	\$ 35,367	\$ 88,418
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,476	SY	4.85	7.20	4.80	\$ 21,709	\$ 32,227	\$ 21,485	\$ 75,421
1.4	Strip and Dispose Top Soil	7,925	CY		24.50	10.50	\$ -	\$ 194,160	\$ 83,212	\$ 277,372
1.5	Site Grading- Excavation for Substation Pad	23,775	CY		9.00	6.00	\$ -	\$ 213,972	\$ 142,648	\$ 356,621
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	12,838	CY		21.00	9.00	\$ -	\$ 269,605.33	\$ 115,545.14	\$ 385,150.47
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	19,258	CY		2.40	1.60	\$ -	\$ 46,218	\$ 30,812	\$ 77,030
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	12,838	CY	25.00	2.40	1.60	\$ 320,959	\$ 30,812	\$ 20,541	\$ 372,312
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	23,775	SY	11.00	6.00	4.00	\$ 261,522	\$ 142,648	\$ 95,099	\$ 499,269
1.11	Site Surfacing - Aggregate 6" Thick	23,775	SY	16.50	4.50	3.00	\$ 392,283	\$ 106,986	\$ 71,324	\$ 570,593
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,896	LF	13.85	13.85	6.92	\$ 26,256	\$ 26,256	\$ 13,128	\$ 65,640
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	3' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	\$ 446,976	\$ 115,200	\$ 76,104	\$ 638,280
1.16	Seeding	17,200	SF	1.50	1.50	1.00	\$ 25,800	\$ 25,800	\$ 17,200	\$ 68,800
1.17	Erosion Control-Silt fence install & remove	2,913	LF	2.41	3.16	0.72	\$ 7,020	\$ 9,205	\$ 2,097	\$ 18,323
1.18	Temporary fencing	1,942	LF	7.50	5.25	2.25	\$ 14,565	\$ 10,196	\$ 4,370	\$ 29,130
1.19	Substation entrance with asphalt	135	SY	19.50	26.00	19.50	\$ 2,637	\$ 3,516	\$ 2,637	\$ 8,789
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,542,746	\$ 1,290,254	\$ 735,698	\$ 3,568,698
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	107	CY	703.89	804.44	502.78	\$ 75,217	\$ 85,962	\$ 53,727	\$ 214,906
2.2	345kV, A Frame 70'- ONE BAY	147	CY	703.89	804.44	502.78	\$ 103,218	\$ 117,963	\$ 73,727	\$ 294,908
2.3	345kV, A Frame 70'- TWO BAY	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.4	345kV, Bus support-3 Ph	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	238	CY	703.89	804.44	502.78	\$ 167,243	\$ 191,135	\$ 119,459	\$ 477,837
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.12	345kV, CCVT	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.13	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.14	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.15	345kV, Shunt Reactor with oil containment-200MVAR			703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.19	345kV, Circuit Breaker (PASS)	100	CY	703.89	804.44	502.78	\$ 70,389	\$ 80,444	\$ 50,278	\$ 201,110
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-3 Ph, low	107	CY	703.89	804.44	502.78	\$ 75,316	\$ 86,075	\$ 53,797	\$ 215,188
2.26	138kV, Bus support-1 Ph, low	73	CY	703.89	804.44	502.78	\$ 51,440	\$ 58,788	\$ 36,743	\$ 146,971
2.27	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.28	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.29	138kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'-ONE BAY	73	CY	703.89	804.44	502.78	\$ 51,215	\$ 58,531	\$ 36,582	\$ 146,328
2.32	138kV, A Frame 50'-TWO BAY		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	1,200	SF	25.00	15.00	10.00	\$ 30,000	\$ 18,000	\$ 12,000	\$ 60,000
2.35	Precast Concrete Piles-12"X80'	190	EA	18,000.00	3,200.00	2,800.00	\$ 3,420,000	\$ 608,000	\$ 532,000	\$ 4,560,000
2.36	Local Control Cabinet foundation	3	CY	703.89	804.44	502.78	\$ 2,086	\$ 2,384	\$ 1,490	\$ 5,959
TOTAL - 345KV FOUNDATION							\$ 5,768,874	\$ 3,276,141	\$ 2,200,338	\$ 11,245,354
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	6	EA	23,400.00	14,040.00	9,360.00	\$ 140,400	\$ 84,240	\$ 56,160	\$ 280,800
3.2	345kV, A Frame 70'- ONE BAY	1	EA	48,100.00	28,860.00	19,240.00	\$ 48,100	\$ 28,860	\$ 19,240	\$ 96,200
3.3	345kV, A Frame 70'- TWO BAY	2	EA	80,327.00	48,196.20	32,130.80	\$ 160,654	\$ 96,392	\$ 64,262	\$ 321,308
3.4	345kV, Bus support-3 Ph	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	30	EA	4,810.00	2,886.00	1,924.00	\$ 144,300	\$ 86,580	\$ 57,720	\$ 288,600
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.12	345kV, CCVT	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.14	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.15	138kV, Bus support-3 Ph, low	10	EA	4,173.00	2,879.76	1,919.84	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.16	138kV, Bus support-1 Ph, low	18	EA	2,782.00	1,919.84	1,279.89	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.17	138kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.18	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.19	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.20	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.21	138kV, A Frame 50'-ONE BAY	1	EA	33,000.00	19,800.00	13,200.00	\$ 33,000	\$ 19,800	\$ 13,200	\$ 66,000
3.22	138kV, A Frame 50'-TWO BAY	1	EA	55,110.00	33,066.00	22,044.00	\$ 55,110	\$ 33,066	\$ 22,044	\$ 110,220
3.25	AL. Bus Tubing, 5" SCH 80	2,181	LF	25.00	184.94	123.29	\$ 54,525	\$ 403,350	\$ 268,900	\$ 726,775
3.26	AL. Bus fittings	1	LS	65,430.00	65,430.00	32,715.00	\$ 65,430	\$ 65,430	\$ 32,715	\$ 163,575
3.27	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	\$ 591,165	\$ 252,972	\$ 108,416	\$ 952,553
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,770,980	\$ 1,373,450	\$ 844,497	\$ 3,988,927
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.4	345kV, CCVT	12	EA	16,900.00	15,941.99	6,832.28	\$ 202,800	\$ 191,304	\$ 81,987	\$ 476,091
4.5	345kV, Disconnect Switch	2	EA	57,720.00	34,632.00	23,088.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.7	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-200MVAR	1	EA	2,901,774.00	3,520.00	880.00	\$ 2,901,774	\$ 3,520	\$ 880	\$ 2,906,174
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		3,177,700.00	217,600.00	\$ -	\$ 3,177,700	\$ 217,600	\$ 3,395,300
4.12	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- Transformer	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.14	345kV, Circuit Breaker (PASS)	5	EA	980,000.00	57,239.00	24,531.00	\$ 4,900,000	\$ 286,195	\$ 122,655	\$ 5,308,850
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	3	EA	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.23	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	\$ 180,000	\$ 143,462	\$ 61,484	\$ 384,945
4.24	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 38,613,141	\$ 6,875,511	\$ 2,460,010	\$ 47,948,662

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	69,300	LF	5.30	1.43	0.29	\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	15,450	LF	11.15	10.80	5.40	\$ 172,268	\$ 166,860	\$ 83,430	\$ 422,558
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,800	LF	266.50	53.04	13.26	\$ 479,700	\$ 95,472	\$ 23,868	\$ 599,040
6.7										
6.8	138kV UG- Conduit	1,775	LF	81.00	107.00	57.00	\$ 143,775	\$ 189,925	\$ 101,175	\$ 434,875
6.9	138kV UG- Cable	6,325	LF	156.00	94.00	62.00	\$ 986,700	\$ 594,550	\$ 392,150	\$ 1,973,400
6.10	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.11	Fiber Optic Cable	1,775	LF	7.40	3.33	2.22	\$ 13,130	\$ 5,912	\$ 3,941	\$ 22,983
6.12	Ground Continuity Conductor	1,775	LF	13.04	7.53	5.02	\$ 23,144	\$ 13,360	\$ 8,907	\$ 45,412
							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 1,987,196	\$ 1,276,679	\$ 613,471	\$ 3,877,347
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,920	LF	2.09	3.42	1.46	\$ 62,563	\$ 102,186	\$ 43,794	\$ 208,542
7.2	Caweld, DSA, 4/0 , T, CROSS	777	EA	165.00	75.00		\$ 128,205	\$ 58,275	\$ -	\$ 186,480
7.3	Ground Rod, 3/4" x 15'	720	EA	135.00	67.50	7.50	\$ 97,200	\$ 48,600	\$ 5,400	\$ 151,200
TOTAL - GROUND GRID							\$ 287,968	\$ 209,061	\$ 49,194	\$ 546,222
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.9	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 902,031	\$ 773,925	\$ 247,106	\$ 1,923,062
3 - Ruland Road 345/138 kV Substation							\$ 51,240,053	\$ 15,174,293	\$ 7,170,170	\$ 73,584,516
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		782,056.20	335,166.94	\$ -	\$ 782,056	\$ 335,167	\$ 1,117,223
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,943,380.64		\$ -	\$ 2,943,381	\$ -	\$ 2,943,381
9.4	Utility PM and Project Oversite	1.0	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.5	Site Accommodation, Facilities, Storage	1.0	LS	735,845.16			\$ 735,845	\$ -	\$ -	\$ 735,845
	Engineering									
9.6	Design Engineering	1.00	LS		5,886,761.28		\$ -	\$ 5,886,761	\$ -	\$ 5,886,761
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		515,091.61		\$ -	\$ 515,092	\$ -	\$ 515,092
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,759,419.35		\$ -	\$ 2,759,419	\$ -	\$ 2,759,419
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		108,024.84		\$ -	\$ 108,025	\$ -	\$ 108,025
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		220,753.55		\$ -	\$ 220,754	\$ -	\$ 220,754

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,158,245.00	\$ -	\$ -	\$ 1,158,245	\$ 1,158,245
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	\$ -	\$ -	\$ 34,747	\$ 34,747
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 2,780,000	\$ -	\$ -	\$ 2,780,000	\$ 2,780,000
9.20	Sales Tax on Materials	8.80%	LS	51,240,053.07			\$ 4,509,125	\$ -	\$ -	\$ 4,509,125
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		73,584.52		\$ -	\$ 73,585	\$ -	\$ 73,585
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,244,970	\$ 15,510,257	\$ 4,317,259	\$ 25,072,487

Propel NY - TO53 AS7

4 - New 345/138 kV Eastern Queens Substation

Total: \$ 283,129,770

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
4 - New 345/138 kV Eastern Queens Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 972,253	\$ 1,074,839	\$ 696,956	\$ 2,744,047
2. SUBSTATION FOUNDATIONS	\$ 21,139,918	\$ 10,332,456	\$ 7,223,891	\$ 38,696,265
3. SUBSTATION STRUCTURES	\$ 1,688,903	\$ 1,162,735	\$ 670,687	\$ 3,522,326
4. MAJOR EQUIPMENT	\$ 76,901,876	\$ 10,614,637	\$ 6,896,901	\$ 94,413,414
5. LOW VOLTAGE & CONTROL CABLE	\$ 630,932	\$ 170,611	\$ 34,122	\$ 835,665
6. CONDUIT & CABLE TRENCH	\$ 605,660	\$ 314,898	\$ 139,880	\$ 1,060,438
7. GROUND GRID	\$ 174,143	\$ 125,755	\$ 29,338	\$ 329,235
8. CONTROL ENCLOSURE	\$ 2,277,743	\$ 1,822,236	\$ 574,507	\$ 4,674,486
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,456,617	\$ 26,381,281	\$ 18,795,146	\$ 55,633,044
Turnkey cost (HVDC, GIS)	\$ 9,629,379	\$ 5,777,627	\$ 3,851,751	\$ 19,258,757
Non-Turnkey cost	\$ 105,218,665	\$ 46,221,821	\$ 31,209,677	\$ 182,650,163
SUBTOTAL (Costs):	\$ 114,848,044	\$ 51,999,448	\$ 35,061,428	\$ 201,908,920
CONTRACTOR MARK-UP (OH&P):	\$ 19,517,122	\$ 8,666,585	\$ 5,848,847	\$ 34,032,555
SUBTOTAL:	\$ 134,365,166	\$ 60,666,034	\$ 40,910,275	\$ 235,941,475
CONTINGENCY ON ENTIRE PROJECT	\$ 26,873,033	\$ 12,133,207	\$ 8,182,055	\$ 47,188,295
TOTAL:	\$ 161,238,200	\$ 72,799,240	\$ 49,092,330	\$ 283,129,770

Description of Work: new 345/ 138 kV GIS substation in Eastern Queens at a vacant utility owned property in the area of 180th Street and Brinkerhoff Avenue. The configuration of the station would include an eight position 345 kV GIS ring bus which will allow for interconnection of the 3 underground circuits from Barrett Substation and the two circuits that connect to Tremont and Dunwoodie Substations. In addition, there will be 3 – 345/138kV autotransformers that connect to the 345 kV bus. Two of the autotransformers will feed a new 138 kV four breaker ring bus that will interconnect to the 901 and 903 circuits that will connect to Jamaica Substation. Each of the feeders that interconnect to Jamaica will be PAR controlled. The third autotransformer, with 138 kV PAR will feed a sperate new 138 kV four breaker ring bus that will interconnect with the 901 and 903 circuits that will connect to Valley Stream and Lake Success Substations. The existing PARs at Lake Success and Valley Stream will be removed. In addition, that ring bus will include a 138kV oil-filled shunt reactor.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - New 345/138 kV Eastern Queens Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'	2,958	SY	4.85	7.20	4.80	\$ 14,346	\$ 21,298	\$ 14,198	\$ 49,842
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	16,682	CY		9.00	6.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,252	CY		21.00	9.00	\$ -	\$ 47,293.68	\$ 20,268.72	\$ 67,562.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	20,269	CY		2.40	1.60	\$ -	\$ 48,645	\$ 32,430	\$ 81,075
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,252	CY	25.00	2.40	1.60	\$ 56,302	\$ 5,405	\$ 3,603	\$ 65,310
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	25,023	SY	-	6.00	4.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.11	Site Surfacing - Aggregate 6" Thick	25,023	SY	8.25	4.50	3.00	\$ 206,441	\$ 112,604	\$ 75,069	\$ 394,114
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,568	LF	13.85	13.85	6.92	\$ 21,714	\$ 21,714	\$ 10,857	\$ 54,284
1.13	30' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	519,366.15	96,000.00	45,300.00	\$ 519,366	\$ 96,000	\$ 45,300	\$ 660,666
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,185	LF	2.41	3.16	0.72	\$ 7,675	\$ 10,063	\$ 2,293	\$ 20,031
1.18	Temporary fencing	2,123	LF	7.50	5.25	2.25	\$ 15,923	\$ 11,146	\$ 4,777	\$ 31,845

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	778	SY	19.50	26.00	19.50	\$ 15,167	\$ 20,222	\$ 15,167	\$ 50,556
1.20	Concrete curb	140	LF	26.00	27.30	11.70	\$ 3,640	\$ 3,822	\$ 1,638	\$ 9,100
1.21	Retaining Wall	580	LF	156.00	117.00	117.00	\$ 90,480	\$ 67,860	\$ 67,860	\$ 226,200
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 972,253	\$ 1,074,839	\$ 696,956	\$ 2,744,047
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	142	CY	703.89	804.44	502.78	\$ 100,290	\$ 114,617	\$ 71,635	\$ 286,542
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,785	\$ 8,897	\$ 5,561	\$ 22,243
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.11	345kV, GIS support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	13	CY	703.89	804.44	502.78	\$ 9,291	\$ 10,619	\$ 6,637	\$ 26,547
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	32	CY	703.89	804.44	502.78	\$ 22,299	\$ 25,485	\$ 15,928	\$ 63,712
2.16	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.23	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.24	345/138 Kv, Control Enclosure-BLDG with generator pad	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.25	138kV, Phase Angle Regulator with oil containment	462	CY	703.89	804.44	502.78	\$ 325,195	\$ 371,651	\$ 232,282	\$ 929,128
2.18	138kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.26	138kV, Circuit Breaker (PASS)	36	CY	703.89	804.44	502.78	\$ 25,027	\$ 28,602	\$ 17,876	\$ 71,506
2.27	138kV, Bus support-3 Ph, low	182	CY	703.89	804.44	502.78	\$ 128,037	\$ 146,328	\$ 91,455	\$ 365,819
2.28	138kV, Bus support-1 Ph, low	154	CY	703.89	804.44	502.78	\$ 108,595	\$ 124,109	\$ 77,568	\$ 310,273
2.29	138kV, Disconnect Switch	194	CY	703.89	804.44	502.78	\$ 136,497	\$ 155,997	\$ 97,498	\$ 389,993
2.30	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.31	138kV, CCVT	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.32	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.34	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, H Frame -SHARED COLUMN (2 BAY)	176	CY	703.89	804.44	502.78	\$ 123,870	\$ 141,565	\$ 88,478	\$ 353,913
2.37	Firewall Foundation	887	CY	703.89	804.44	502.78	\$ 624,374	\$ 713,570	\$ 445,982	\$ 1,783,926
2.38	Precast Firewall for transformer, PARs, reactors	13,410	SF	25.00	15.00	10.00	\$ 335,250	\$ 201,150	\$ 134,100	\$ 670,500
2.39	Precast Concrete Piles-12"X80'	768	EA	18,000.00	3,200.00	2,800.00	\$ 13,824,000	\$ 2,457,600	\$ 2,150,400	\$ 18,432,000
2.40	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 2,607	\$ 2,979	\$ 1,862	\$ 7,449
2.41	Precast Arch. Wall foundation	3,564	CY	703.89	804.44	502.78	\$ 2,508,646	\$ 2,867,024	\$ 1,791,890	\$ 7,167,560
2.42	Precast Arch. Wall	1,800	LF	227.50	91.00	136.50	\$ 409,500.00	\$ 163,800.00	\$ 245,700.00	\$ 819,000.00
2.43	345KV GIS Sub Slab	741	CY	703.89	804.44	502.78	\$ 521,396.30	\$ 595,881.48	\$ 372,425.93	\$ 1,489,703.70
TOTAL - 345KV FOUNDATION							\$ 21,139,918	\$ 10,332,456	\$ 7,223,891	\$ 38,696,265
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	8	EA	23,400.00	14,040.00	9,360.00	\$ 187,200	\$ 112,320	\$ 74,880	\$ 374,400
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	EA	8,346.00	5,758.74	3,839.16				
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16				
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00				
3.9	345kV, GIS support-1 Ph	15	EA	4,810.00	2,886.00	1,924.00				
3.10	345kV, GIS support-3 Ph	12	EA	8,346.00	5,758.74	3,839.16				
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16				
3.12	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.14	345kV, Disconnect Switch	1	EA	19,240.00	11,544.00	7,696.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.15	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.16	138kV, Bus support-3 Ph, low	17	EA	4,173.00	2,879.76	1,919.84	\$ 70,941	\$ 48,956	\$ 32,637	\$ 152,534
3.17	138kV, Bus support-1 Ph, low	38	EA	2,782.00	1,919.84	1,279.89	\$ 105,716	\$ 72,954	\$ 48,636	\$ 227,306
3.18	138kV, Disconnect Switch	8	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, CCVT	24	EA	3,206.67	1,924.00	1,282.67	\$ 76,960	\$ 46,176	\$ 30,784	\$ 153,920
3.21	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.24	138kV, H Frame -SHARED COLUMN (2 BAY)	2	EA	42,900.00	25,740.00	17,160.00	\$ 85,800	\$ 51,480	\$ 34,320	\$ 171,600
3.25	AL. Bus Tubing, 5" SCH 80	1,620	LF	25.00	184.94	123.29	\$ 40,500	\$ 299,600	\$ 199,733	\$ 539,833
3.26	AL. Bus fittings	1	LS	48,600.00	48,600.00	24,300.00	\$ 48,600	\$ 48,600	\$ 24,300	\$ 121,500
3.27	Steel grating and support beams-transformer moat	346,240	LB	2.73	1.17	0.50	\$ 945,864	\$ 404,755	\$ 173,466	\$ 1,524,085
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,688,903	\$ 1,162,735	\$ 670,687	\$ 3,522,326
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	EA							
4.2	345kV, GIS fast acting GND SW	0	EA							
4.3	345kV, GIS to air bushing	0	EA							
4.4	345kV, GIS Cable sealing end	0	EA					\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.6	345kV, CCVT	0	EA	16,900.00	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	1	EA	57,720.00	34,632.00	23,088.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
4.8	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.9	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.15	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	8	EA	1,203,672.31	722,203.39	481,468.93	\$ 9,629,379	\$ 5,777,627	\$ 3,851,751	\$ 19,258,757
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	3	EA	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.20	138kV, Phase Angle Regulator with oil containment	3	EA	10,087,382.00	3,520.00	880.00	\$ 30,262,146	\$ 10,560	\$ 2,640	\$ 30,275,346
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	3	EA		381,400.00	250,600.00	\$ -	\$ 1,144,200	\$ 751,800	\$ 1,896,000
4.22	138kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,131,004.00	3,520.00	880.00	\$ 2,131,004	\$ 3,520	\$ 880	\$ 2,135,404
4.23	Transport & Testing- Shunt reactor, 138kV	1	EA		280,900.00	183,600.00	\$ -	\$ 280,900	\$ 183,600	\$ 464,500
4.24	138kV, Circuit Breaker (PASS)	8	EA	510,000.00	13,559.00	5,811.00	\$ 4,080,000	\$ 108,472	\$ 46,488	\$ 4,234,960
4.25	138kV, Disconnect Switch	8	EA	37,700.00	11,875.50	5,089.50	\$ 301,600	\$ 95,004	\$ 40,716	\$ 437,320
4.26	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.27	138kV, CCVT	24	EA	10,000.00	7,970.08	3,415.75	\$ 240,000	\$ 191,282	\$ 81,978	\$ 513,260
4.28	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.29	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.30	345kV Gas-Insulated Bus Conductor	1,564	LF	550.00	275.00	82.50				\$ -
4.31	345kV Gas-Insulated Bus Conductor-elbow	36	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 76,901,876	\$ 10,614,637	\$ 6,896,901	\$ 94,413,414
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	119,100	LF	5.30	1.43	0.29	\$ 630,932	\$ 170,611	\$ 34,122	\$ 835,665
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 630,932	\$ 170,611	\$ 34,122	\$ 835,665
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	22,650	LF	11.15	10.80	5.40	\$ 252,548	\$ 244,620	\$ 122,310	\$ 619,478
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
TOTAL - CONDUIT & CABLE TRENCH							\$ 605,660	\$ 314,898	\$ 139,880	\$ 1,060,438
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,830	LF	2.09	3.42	1.46	\$ 37,283	\$ 60,895	\$ 26,098	\$ 124,275
7.2	Caweld, DSA, 4/0 , T, CROSS	476	EA	165.00	75.00		\$ 78,540	\$ 35,700	\$ -	\$ 114,240
7.3	Ground Rod, 3/4" x 15'	432	EA	135.00	67.50	7.50	\$ 58,320	\$ 29,160	\$ 3,240	\$ 90,720

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - GROUND GRID							\$ 174,143	\$ 125,755	\$ 29,338	\$ 329,235
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	522,587.44	365,811.21	156,776.23	\$ 522,587	\$ 365,811	\$ 156,776	\$ 1,045,175
8.2	Primary Line Relays (87L): SEL-411L	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.3	Backup Line Relays (87L): GE L90	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.4	Primary Bay Control: SEL-451	16	EA	21,328.12	17,062.49	4,265.62	\$ 341,250	\$ 273,000	\$ 68,250	\$ 682,500
8.5	Backup Bay Control: SEL-451	16	EA	21,328.12	17,062.49	4,265.62	\$ 341,250	\$ 273,000	\$ 68,250	\$ 682,500
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.8	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator,	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.9	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.10	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.12	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.13	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.14	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,277,743	\$ 1,822,236	\$ 574,507	\$ 4,674,486
4 - New 345/138 kV Eastern Queens Substation							\$ 104,391,427	\$ 25,618,167	\$ 16,266,282	\$ 146,275,876
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,128,927.46	483,826.05	\$ -	\$ 1,128,927	\$ 483,826	\$ 1,612,754
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,270,171.19		\$ -	\$ 1,270,171	\$ -	\$ 1,270,171
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		5,080,684.76		\$ -	\$ 5,080,685	\$ -	\$ 5,080,685
9.4	Utility PM and Project Oversight	1.0	LS		1,270,171.19		\$ -	\$ 1,270,171	\$ -	\$ 1,270,171
9.5	Site Accommodation, Facilities, Storage	1.0	LS	1,270,171.19			\$ 1,270,171	\$ -	\$ -	\$ 1,270,171
	Engineering									
9.6	Design Engineering	1.00	LS		10,161,369.51		\$ -	\$ 10,161,370	\$ -	\$ 10,161,370
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		889,119.83		\$ -	\$ 889,120	\$ -	\$ 889,120
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,763,141.96		\$ -	\$ 4,763,142	\$ -	\$ 4,763,142
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		1,270,171.19		\$ -	\$ 1,270,171	\$ -	\$ 1,270,171
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		381,051.36		\$ -	\$ 381,051	\$ -	\$ 381,051
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			12,274,000.00	\$ -	\$ -	\$ 12,274,000	\$ 12,274,000
9.17	Legal Fees (Real estate)	1.00	LS			368,220.00	\$ -	\$ -	\$ 368,220	\$ 368,220
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 5,660,000	\$ -	\$ -	\$ 5,660,000	\$ 5,660,000
9.20	Sales Tax on Materials	8.80%	LS	104,391,427.09			\$ 9,186,446	\$ -	\$ -	\$ 9,186,446
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		146,275.88		\$ -	\$ 146,276	\$ -	\$ 146,276
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,456,617	\$ 26,381,281	\$ 18,795,146	\$ 55,633,044

Propel NY - TO53 AS7

5 - Barrett 345 kV Substation

Total: \$ 191,375,164

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	1,437,095.65	1,550,179.60	868,477.73	3,855,753
2. SUBSTATION FOUNDATIONS	20,727,234.63	6,296,482.44	4,736,239.02	31,759,956
3. SUBSTATION STRUCTURES	1,607,304.31	1,218,253.07	742,457.38	3,568,015
4. MAJOR EQUIPTMENT	42,278,948.00	4,408,870.22	2,652,244.38	49,340,063
5. LOW VOLTAGE & CONTROL CABLE	643,646.25	174,048.75	34,809.75	852,505
6. CONDUIT & CABLE TRENCH	713,905.00	332,580.00	143,085.00	1,189,570
7. GROUND GRID	371,994.00	139,687.50	3,562.50	515,244
8. CONTROL ENCLOSURE	1,561,652.84	1,274,050.69	406,602.15	3,242,306
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	7,045,310.81	23,915,021.07	9,868,209.55	40,828,541
SUBTOTAL (Costs):	\$ 76,387,091	\$ 39,309,173	\$ 19,455,687	135,151,952
CONTRACTOR MARK-UP (OH&P)	\$ 13,749,676	\$ 7,075,651	\$ 3,502,024	24,327,351
SUBTOTAL:	\$ 90,136,768	\$ 46,384,825	\$ 22,957,711	159,479,304
CONTINGENCY ON ENTIRE PROJECT	\$ 18,027,354	\$ 9,276,965	\$ 4,591,542	31,895,861
TOTAL:	\$ 108,164,122	\$ 55,661,789	\$ 27,549,253	191,375,164

Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of Hempstead, Nassau County. The New 345 kV Barrett Substation will serve as the main Point of Interconnection (“POI”)between the generation and transmission operator. The New substation will step up the 138 kV POI voltage to 345 kV, and a new 345 kV underground line will be connected

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 70,200	\$ 46,800	\$ 117,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,899	SY	4.85	7.20	4.80	\$ 23,762	\$ 35,275	\$ 23,517	\$ 82,554
1.4	Strip and Dispose Top Soil	10,487	CY		24.50	10.50	\$ -	\$ 256,923	\$ 110,110	\$ 367,033
1.5	Site Grading- Excavation for Substation Pad	31,460	CY		9.00	6.00	\$ -	\$ 283,140	\$ 188,760	\$ 471,900
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	16,988	CY		21.00	9.00	\$ -	\$ 356,756.40	\$ 152,895.60	\$ 509,652.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	25,483	CY		2.40	1.60	\$ -	\$ 61,158	\$ 40,772	\$ 101,930
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	16,988	CY	25.00	2.40	1.60	\$ 424,710	\$ 40,772	\$ 27,181	\$ 492,664
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	31,460	SY	11.00	6.00	4.00	\$ 346,060	\$ 188,760	\$ 125,840	\$ 660,660
1.11	Site Surfacing - Aggregate 6" Thick	31,460	SY	16.50	4.50	3.00	\$ 519,090	\$ 141,570	\$ 94,380	\$ 755,040
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,909	LF	13.85	13.85	6.92	\$ 26,436	\$ 26,436	\$ 13,218	\$ 66,090
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH AND INLET	1	EA	25,131.00	28,800.00	13,590.00	\$ 25,131	\$ 28,800	\$ 13,590	\$ 67,521
1.16	Seeding	10,160	SF	1.50	1.50	1.00	\$ 15,240	\$ 15,240	\$ 10,160	\$ 40,640
1.17	Erosion Control-Silt fence install & remove	2,936	LF	2.41	3.16	0.72	\$ 7,075	\$ 9,276	\$ 2,114	\$ 18,464
1.18	Temporary fencing	1,957	LF	7.50	5.25	2.25	\$ 14,678	\$ 10,274	\$ 4,403	\$ 29,355
1.19	Substation entrance with asphalt	490	SY	19.50	26.00	19.50	\$ 9,555	\$ 12,740	\$ 9,555	\$ 31,850
1.20	Concrete curb	160	LF	26.00	27.30	11.70	\$ 4,160	\$ 4,368	\$ 1,872	\$ 10,400
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,437,096	\$ 1,550,180	\$ 868,478	\$ 3,855,753
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	53	CY	703.89	804.44	502.78	\$ 37,609	\$ 42,981	\$ 26,863	\$ 107,453
2.2	345kV, A Frame 70'- ONE BAY	147	CY	703.89	804.44	502.78	\$ 103,218	\$ 117,963	\$ 73,727	\$ 294,908
2.3	345kV, A Frame 70'- TWO BAY	440	CY	703.89	804.44	502.78	\$ 309,653	\$ 353,889	\$ 221,181	\$ 884,723
2.4	345kV, Bus support-3 Ph	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	333	CY	703.89	804.44	502.78	\$ 234,140	\$ 267,589	\$ 167,243	\$ 668,972
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.12	345kV, CCVT	112	CY	703.89	804.44	502.78	\$ 79,081	\$ 90,379	\$ 56,487	\$ 225,947
2.13	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.14	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.15	345kV, Shunt Reactor with oil containment-250MVAR	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.19	345kV, Circuit Breaker (PASS)	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.23	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.26	138kV, Bus support-1 Ph, low	32	CY	703.89	804.44	502.78	\$ 22,862	\$ 26,128	\$ 16,330	\$ 65,321
2.27	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,147	\$ 19,596	\$ 12,248	\$ 48,990
2.28	138kV, Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.31	138kV, A Frame 50'-ONE BAY	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, A Frame 50'-TWO BAY		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	103	CY	703.89	804.44	502.78	\$ 72,472	\$ 82,825	\$ 51,766	\$ 207,063
2.34	Precast Firewall for transformer, PARs, reactors	1,500	SF	25.00	15.00	10.00	\$ 37,500	\$ 22,500	\$ 15,000	\$ 75,000
2.35	Precast Concrete Piles-12"X80'	1,000	EA	18,000.00	3,200.00	2,800.00	\$ 18,000,000	\$ 3,200,000	\$ 2,800,000	\$ 24,000,000
2.36	Local Control Cabinet foundation	6	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 20,727,235	\$ 6,296,482	\$ 4,736,239	\$ 31,759,956
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	3	EA	23,400.00	14,040.00	9,360.00	\$ 70,200	\$ 42,120	\$ 28,080	\$ 140,400
3.2	345kV, A Frame 70'- ONE BAY	1	EA	48,100.00	28,860.00	19,240.00	\$ 48,100	\$ 28,860	\$ 19,240	\$ 96,200
3.3	345kV, A Frame 70'- TWO BAY	2	EA	80,327.00	48,196.20	32,130.80	\$ 160,654	\$ 96,392	\$ 64,262	\$ 321,308
3.4	345kV, Bus support-3 Ph	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	42	EA	4,810.00	2,886.00	1,924.00	\$ 202,020	\$ 121,212	\$ 80,808	\$ 404,040
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	4	EA	8,346.00	5,758.74	3,839.16	\$ 33,384	\$ 23,035	\$ 15,357	\$ 71,776
3.12	345kV, CCVT	21	EA	4,810.00	2,886.00	1,924.00	\$ 101,010	\$ 60,606	\$ 40,404	\$ 202,020
3.13	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.14	345kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.15	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.16	138kV, Bus support-1 Ph, low	8	EA	2,782.00	1,919.84	1,279.89	\$ 22,256	\$ 15,359	\$ 10,239	\$ 47,854
3.17	138kV, Disconnect Switch	3	EA				\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.21	138kV, A Frame 50'-ONE BAY	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'-TWO BAY	0	EA	55,110.00	33,066.00	22,044.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	1,896	LF	25.00	184.94	123.29	\$ 47,400	\$ 350,642	\$ 233,762	\$ 631,804

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	AL. Bus fittings	1	LS	56,880.00	56,880.00	28,440.00	\$ 56,880	\$ 56,880	\$ 28,440	\$ 142,200
3.25	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	\$ 591,165	\$ 252,972	\$ 108,416	\$ 952,553
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,607,304	\$ 1,218,253	\$ 742,457	\$ 3,568,015
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	12	EA	27,144.00	5,460.00	2,340.00	\$ 325,728	\$ 65,520	\$ 28,080	\$ 419,328
4.4	345kV, CCVT	21	EA	16,900.00	15,941.99	6,832.28	\$ 354,900	\$ 334,782	\$ 143,478	\$ 833,160
4.5	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	\$ 13,260,000	\$ 10,560	\$ 2,640	\$ 13,273,200
4.7	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-250MVAR	1	EA	3,210,113.00	3,520.00	880.00	\$ 3,210,113	\$ 3,520	\$ 880	\$ 3,214,513
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		352,900.00	231,600.00	\$ -	\$ 352,900	\$ 231,600	\$ 584,500
4.12	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.13	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.14	345kV, Circuit Breaker (PASS)	8	EA	980,000.00	57,239.00	24,531.00	\$ 7,840,000	\$ 457,912	\$ 196,248	\$ 8,494,160
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	12	EA	8,450.00	5,460.00	2,340.00	\$ 101,400	\$ 65,520	\$ 28,080	\$ 195,000
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.22	138kV, Cable sealing end	9	EA	11,600.00	1,050.00	450.00	\$ 104,400	\$ 9,450	\$ 4,050	\$ 117,900
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.25	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 42,278,948	\$ 4,408,870	\$ 2,652,244	\$ 49,340,063

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	121,500	LF	5.30	1.43	0.29	\$ 643,646	\$ 174,049	\$ 34,810	\$ 852,505
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE										
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	22,200	LF	11.15	10.80	5.40	\$ 247,530	\$ 239,760	\$ 119,880	\$ 607,170
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,750	LF	266.50	53.04	13.26	\$ 466,375	\$ 92,820	\$ 23,205	\$ 582,400
6.7										
TOTAL - CONDUIT & CABLE TRENCH										
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	34,000	LF	2.09	-	-	\$ 71,094	\$ -	\$ -	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	1,435	EA	165.00	75.00		\$ 236,775	\$ 107,625	\$ -	\$ 344,400
7.3	Ground Rod, 3/4" x 15'	475	EA	135.00	67.50	7.50	\$ 64,125	\$ 32,063	\$ 3,563	\$ 99,750
TOTAL - GROUND GRID										
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Line Relays (87L): SEL-411L	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.3	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Primary Bay Control: SEL-451	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.5	Backup Bay Control: SEL-451	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.15	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.16	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.18	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE										
Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of H							\$ 69,341,781	\$ 15,394,152	\$ 9,587,478	\$ 94,323,411
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		874,357.06	374,724.45	\$ -	\$ 874,357	\$ 374,724	\$ 1,249,082
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		943,234.11		\$ -	\$ 943,234	\$ -	\$ 943,234
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,772,936.43		\$ -	\$ 3,772,936	\$ -	\$ 3,772,936
9.4	Utility PM and Project Oversight	1.0	LS		943,234.11		\$ -	\$ 943,234	\$ -	\$ 943,234
9.5	Site Accommodation, Facilities, Storage	1.0	LS	943,234.11			\$ 943,234	\$ -	\$ -	\$ 943,234
	Engineering									
9.6	Design Engineering	1.00	LS		7,545,872.87		\$ -	\$ 7,545,873	\$ -	\$ 7,545,873
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		660,263.88		\$ -	\$ 660,264	\$ -	\$ 660,264
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,537,127.91		\$ -	\$ 3,537,128	\$ -	\$ 3,537,128
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		943,234.11		\$ -	\$ 943,234	\$ -	\$ 943,234
9.13	Environmental-special studies/investigation	1.00	LS		4,300,000		\$ -	\$ 4,300,000	\$ -	\$ 4,300,000
9.14	Warranties / LOC's	1.00	LS		282,970.23		\$ -	\$ 282,970	\$ -	\$ 282,970
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,501,170.00	\$ -	\$ -	\$ 5,501,170	\$ 5,501,170
9.17	Legal Fees (Real estate)	1.00	LS		-	165,035.10	\$ -	\$ -	\$ 165,035	\$ 165,035

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,820,000	\$ -	\$ -	\$ 3,820,000	\$ 3,820,000
9.20	Sales Tax on Materials	8.80%	LS	69,341,780.68			\$ 6,102,077	\$ -	\$ -	\$ 6,102,077
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		94,323.41		\$ -	\$ 94,323	\$ -	\$ 94,323
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,045,311	\$ 23,915,021	\$ 9,868,210	\$ 40,828,541

Propel NY - TO53 AS7

6- Sprain Brook HVDC Converter Station

Total: \$ 460,966,537

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
6- Sprain Brook HVDC Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,957,183	\$ 7,337,579	\$ 8,887,882	\$ 19,182,644.14
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,361.60
7. GROUND GRID	\$ 211,739	\$ 153,219	\$ 35,869	\$ 400,826.00
8. CONTROL ENCLOSURE	\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312.46
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,338,675	\$ 4,853,037	\$ 14,923,959	\$ 36,115,670.06
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 19,740,191	\$ 12,438,298	\$ 23,871,325	\$ 56,049,814
SUBTOTAL (Costs):	\$ 199,740,191	\$ 72,438,298	\$ 83,871,325	\$ 356,049,814
CONTRACTOR MARK-UP (OH&P):	\$ 14,353,234	\$ 5,838,894	\$ 7,896,839	\$ 28,088,967
SUBTOTAL:	\$ 214,093,426	\$ 78,277,191	\$ 91,768,164	\$ 384,138,781
CONTINGENCY ON ENTIRE PROJECT	\$ 42,818,685	\$ 15,655,438	\$ 18,353,633	\$ 76,827,756
TOTAL:	\$ 256,912,111	\$ 93,932,629	\$ 110,121,797	\$ 460,966,537

Description of Work: new +/- 320 kV 1250 MW HVDC voltage source converter station. The station will be location on property adjacent to the Northport Generating Station.The HVDC converter station output will interconnect into a new 345 kV four (4) breaker ring bus station.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6- Sprain Brook HVDC Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 126,000	\$ 84,000	\$ 210,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	5,062	SY	4.85	7.20	4.80	\$ 24,553	\$ 36,450	\$ 24,300	\$ 85,302
1.4	Strip and Dispose Top Soil	9,680	CY		24.50	10.50	\$ -	\$ 237,160	\$ 101,640	\$ 338,800
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	4,840	CY		9.00	6.00	\$ -	\$ 43,560	\$ 29,040	\$ 72,600
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	43,560	CY		120.00	180.00	\$ -	\$ 5,227,200.00	\$ 7,840,800.00	\$ 13,068,000
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	52,272	CY		21.00	9.00	\$ -	\$ 1,097,712.00	\$ 470,448.00	\$ 1,568,160
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,307	CY		2.40	1.60	\$ -	\$ 3,136	\$ 2,091	\$ 5,227
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	52,272	CY	25.00	2.40	1.60	\$ 1,306,800	\$ 125,453	\$ 83,635	\$ 1,515,888
1.10	Install substation 8" pad base	14,520	SY	11.00	6.00	4.00	\$ 159,720	\$ 87,120	\$ 58,080	\$ 304,920
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,817	LF	13.85	13.85	6.92	\$ 25,162	\$ 25,162	\$ 12,581	\$ 62,905
1.13	25' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	995,011.20	153,600.00	72,480.00	\$ 995,011	\$ 153,600	\$ 72,480	\$ 1,221,091
1.16	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.17	Erosion Control-Silt fence install & remove	2,998	LF	2.41	3.16	0.72	\$ 7,225	\$ 9,474	\$ 2,159	\$ 18,858
1.18	Temporary fencing	1,999	LF	7.50	5.25	2.25	\$ 14,990	\$ 10,493	\$ 4,497	\$ 29,981
1.19	Substation entrance with asphalt	812	SY	19.50	26.00	19.50	\$ 15,832	\$ 21,109	\$ 15,832	\$ 52,773
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,957,183	\$ 7,337,579	\$ 8,887,882	\$ 19,182,644

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	345kV Cap Bank-250MVR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	345kV Cap Bank-Reactor	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame -SHARED COLUMN (2 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.41	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.42	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.43	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.44	Precast Arch. Wall foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.45	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.46	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch - 3Ph	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch-3 Ph	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.24	138kV, H Frame -SHARED COLUMN (2 BAY)	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings		LS	14,850.00	14,850.00	7,425.00	\$ -	\$ -	\$ -	\$ -
3.27	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
3.28	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.29	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end - 3 Ph	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA	16,900.00	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA	980,000.00	57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	345kV Cap Bank-250MVR	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	345kV Cap Bank-Reactor	0	EA				\$ -	\$ -	\$ -	\$ -
4.21	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Shunt Reactor with oil containment-150MVAR	0			3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.24	Transport & Testing- Shunt reactor, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.28	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.29	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.30	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.31	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.32	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.33	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.34	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.35	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.36	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.37	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.38	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.39	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.40	HVDC VSC Converter Station -Storage building		EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	0	LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	572	LF	266.50	53.04	13.26	\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
TOTAL - CONDUIT & CABLE TRENCH							\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,800	LF	2.09	3.42	1.46	\$ 45,584	\$ 74,454	\$ 31,909	\$ 151,946
7.2	Caweld, DSA, 4/0 , T, CROSS	575	EA	165.00	75.00		\$ 94,875	\$ 43,125	\$ -	\$ 138,000
7.3	Ground Rod, 3/4" x 15'	528	EA	135.00	67.50	7.50	\$ 71,280	\$ 35,640	\$ 3,960	\$ 110,880
TOTAL - GROUND GRID							\$ 211,739	\$ 153,219	\$ 35,869	\$ 400,826
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.5	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.6	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.8	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
6- Sprain Brook HVDC Converter Station							\$ 183,401,516	\$ 67,585,261	\$ 68,947,367	\$ 319,934,144
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		578,641.98	247,989.42	\$ -	\$ 578,642	\$ 247,989	\$ 826,631
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		199,341.44		\$ -	\$ 199,341	\$ -	\$ 199,341
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		797,365.77		\$ -	\$ 797,366	\$ -	\$ 797,366
9.4	Utility PM and Project Oversight	1.0	LS		199,341.44		\$ -	\$ 199,341	\$ -	\$ 199,341
9.5	Site Accommodation, Facilities, Storage	1.0	LS	199,341.44			\$ 199,341	\$ -	\$ -	\$ 199,341
	Engineering									
9.6	Design Engineering	1.00	LS		1,594,731.54		\$ -	\$ 1,594,732	\$ -	\$ 1,594,732
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		139,539.01		\$ -	\$ 139,539	\$ -	\$ 139,539
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		747,530.41		\$ -	\$ 747,530	\$ -	\$ 747,530
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		199,341.44		\$ -	\$ 199,341	\$ -	\$ 199,341
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		59,802.43		\$ -	\$ 59,802	\$ -	\$ 59,802
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,309,407.00	\$ -	\$ -	\$ 5,309,407	\$ 5,309,407
9.17	Legal Fees (Real estate)	1.00	LS		-	159,282.21	\$ -	\$ -	\$ 159,282	\$ 159,282
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 9,200,000	\$ -	\$ -	\$ 9,200,000	\$ 9,200,000
9.20	Sales Tax on Materials	8.80%	LS	183,401,516.29			\$ 16,139,333	\$ -	\$ -	\$ 16,139,333
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		319,934.14		\$ -	\$ 319,934	\$ -	\$ 319,934
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,338,675	\$ 4,853,037	\$ 14,923,959	\$ 36,115,670

Propel NY - TO53 AS7

7 - New Northport HVDC Converter Station

Total: \$ 431,564,213

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
7 - New Northport HVDC Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,355,126	\$ 2,265,620	\$ 1,399,973	\$ 5,020,718
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
7. GROUND GRID	\$ 211,739	\$ 153,219	\$ 35,869	\$ 400,826
8. CONTROL ENCLOSURE	\$ 805,312	\$ 644,250	\$ 161,062	\$ 1,610,624
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,134,391	\$ 1,918,296	\$ 10,010,244	\$ 28,062,931
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 18,659,006	\$ 5,011,723	\$ 11,614,732	\$ 35,285,461
SUBTOTAL (Costs):	\$ 198,659,006	\$ 65,011,723	\$ 71,614,732	\$ 335,285,461
CONTRACTOR MARK-UP (OH&P):	\$ 14,158,621	\$ 4,502,110	\$ 5,690,652	\$ 24,351,383
SUBTOTAL:	\$ 212,817,627	\$ 69,513,833	\$ 77,305,384	\$ 359,636,844
CONTINGENCY ON ENTIRE PROJECT	\$ 42,563,525	\$ 13,902,767	\$ 15,461,077	\$ 71,927,369
TOTAL:	\$ 255,381,152	\$ 83,416,600	\$ 92,766,461	\$ 431,564,213

Description of Work: new +/- 320 kV 1250 MW HVDC voltage source converter station. The station will be location on property adjacent to the Sprain Brook Substation.The HVDC converter station output will interconnect via a short overhead or underground line into the additional bay at Sprain Brook that was added as part of The Solution

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - New Northport HVDC Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 64,800	\$ 43,200	\$ 108,000
1.2	Demolition	1	LS	-	1,200,000.00	800,000.00	\$ -	\$ 1,200,000	\$ 800,000	\$ 2,000,000
1.3	New Access Road - 20'	5,062	SY	4.85	7.20	4.80	\$ 24,553	\$ 36,450	\$ 24,300	\$ 85,302
1.4	Strip and Dispose Top Soil	9,680	CY		24.50	10.50	\$ -	\$ 237,160	\$ 101,640	\$ 338,800
1.5	Site Grading- Excavation for Substation Pad	16,682	CY		9.00	6.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,252	CY		21.00	9.00	\$ -	\$ 47,293.68	\$ 20,268.72	\$ 67,562.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	20,269	CY		2.40	1.60	\$ -	\$ 48,645	\$ 32,430	\$ 81,075
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,252	CY	25.00	2.40	1.60	\$ 56,302	\$ 5,405	\$ 3,603	\$ 65,310
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	25,023	SY	-	6.00	4.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.11	Site Surfacing - Aggregate 6" Thick	25,023	SY	8.25	4.50	3.00	\$ 206,441	\$ 112,604	\$ 75,069	\$ 394,114
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,817	LF	13.85	13.85	6.92	\$ 25,162	\$ 25,162	\$ 12,581	\$ 62,905
1.13	30' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	\$ 16,200	\$ 6,490	\$ 2,610	\$ 25,300
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	\$ 5,000	\$ 2,000	\$ 700	\$ 7,700
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	995,011.20	153,600.00	72,480.00	\$ 995,011	\$ 153,600	\$ 72,480	\$ 1,221,091
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,804	LF	2.41	3.16	0.72	\$ 6,756	\$ 8,859	\$ 2,019	\$ 17,634
1.18	Temporary fencing	1,869	LF	7.50	5.25	2.25	\$ 14,018	\$ 9,812	\$ 4,205	\$ 28,035
1.19	Substation entrance with asphalt	198	SY	19.50	26.00	19.50	\$ 3,863	\$ 5,151	\$ 3,863	\$ 12,877
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,355,126	\$ 2,265,620	\$ 1,399,973	\$ 5,020,718
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	345kV Cap Bank-250MVR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	345kV Cap Bank-Reactor	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame -SHARED COLUMN (2 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.41	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.42	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.43	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.44	Precast Arch. Wall foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.45	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.46	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch - 3Ph	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch-3 Ph	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.24	138kV, H Frame -SHARED COLUMN (2 BAY)	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.27	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.28	AL. Bus fittings		LS	14,850.00	14,850.00	7,425.00	\$ -	\$ -	\$ -	\$ -
3.29	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
3.28	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.29	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end - 3 Ph	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	345kV Cap Bank-250MVR	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	345kV Cap Bank-Reactor	0	EA				\$ -	\$ -	\$ -	\$ -
4.21	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Shunt Reactor with oil containment-150MVAR	0			3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.24	Transport & Testing- Shunt reactor, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.28	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.29	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.30	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.31	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.32	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.33	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
4.34	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.35	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.36	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.37	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.38	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.39	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.40	HVDC VSC Converter Station -Storage building		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	0	LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	572	LF	266.50	53.04	13.26	\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
TOTAL - CONDUIT & CABLE TRENCH							\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,800	LF	2.09	3.42	1.46	\$ 45,584	\$ 74,454	\$ 31,909	\$ 151,946
7.2	Caweld, DSA, 4/0 , T, CROSS	575	EA	165.00	75.00		\$ 94,875	\$ 43,125	\$ -	\$ 138,000
7.3	Ground Rod, 3/4" x 15'	528	EA	135.00	67.50	7.50	\$ 71,280	\$ 35,640	\$ 3,960	\$ 110,880
TOTAL - GROUND GRID							\$ 211,739	\$ 153,219	\$ 35,869	\$ 400,826
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Cap Bank Relays: SEL-487V	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Cap Bank Relays: GE C70	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.5	Backup Bay Control: SEL-451	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 805,312	\$ 644,250	\$ 161,062	\$ 1,610,624
7 - New Northport HVDC Converter Station							\$ 182,524,615	\$ 63,093,427	\$ 61,604,489	\$ 307,222,530
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		164,427.04	70,468.73	\$ -	\$ 164,427	\$ 70,469	\$ 234,896
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		72,225.30		\$ -	\$ 72,225	\$ -	\$ 72,225
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		288,901.19		\$ -	\$ 288,901	\$ -	\$ 288,901
9.4	Utility PM and Project Oversight	1.0	LS		72,225.30		\$ -	\$ 72,225	\$ -	\$ 72,225
9.5	Site Accommodation, Facilities, Storage	1.0	LS	72,225.30			\$ 72,225	\$ -	\$ -	\$ 72,225
	Engineering									
9.6	Design Engineering	1.00	LS		577,802.39		\$ -	\$ 577,802	\$ -	\$ 577,802
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		50,557.71		\$ -	\$ 50,558	\$ -	\$ 50,558
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		270,844.87		\$ -	\$ 270,845	\$ -	\$ 270,845
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		72,225.30		\$ -	\$ 72,225	\$ -	\$ 72,225
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		21,667.59		\$ -	\$ 21,668	\$ -	\$ 21,668
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,272,500.00	\$ -	\$ -	\$ 1,272,500	\$ 1,272,500
9.17	Legal Fees (Real estate)	1.00	LS		-	38,175.00	\$ -	\$ -	\$ 38,175	\$ 38,175
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 8,620,000	\$ -	\$ -	\$ 8,620,000	\$ 8,620,000
9.20	Sales Tax on Materials	8.80%	LS	182,524,614.58			\$ 16,062,166	\$ -	\$ -	\$ 16,062,166
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		307,222.53		\$ -	\$ 307,223	\$ -	\$ 307,223
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,134,391	\$ 1,918,296	\$ 10,010,244	\$ 28,062,931

Propel NY - TO53 AS7

8 - New Northport 345/138 kV Substation

Total: \$ 182,061,111

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
8 - New Northport 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 660,771	\$ 842,577	\$ 494,090	\$ 1,997,437
2. SUBSTATION FOUNDATIONS	\$ 21,627,603	\$ 6,697,390	\$ 5,015,731	\$ 33,340,724
3. SUBSTATION STRUCTURES	\$ 710,182	\$ 344,727	\$ 181,633	\$ 1,236,543
4. MAJOR EQUIPMENT	\$ 34,283,699	\$ 12,530,560	\$ 8,281,297	\$ 55,095,555
5. LOW VOLTAGE & CONTROL CABLE	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH	\$ 4,805,109	\$ 2,861,100	\$ 1,737,042	\$ 9,403,251
7. GROUND GRID	\$ 147,079	\$ 105,765	\$ 24,510	\$ 277,354
8. CONTROL ENCLOSURE	\$ 585,716	\$ 493,301	\$ 211,415	\$ 1,290,432
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,356,836	\$ 17,034,976	\$ 4,474,823	\$ 27,866,635
Turnkey cost (HVDC, GIS)	\$ 11,214,997	\$ 6,728,998	\$ 4,485,999	\$ 22,429,993
Non-Turnkey cost	\$ 58,224,225	\$ 34,252,306	\$ 15,948,723	\$ 108,425,254
SUBTOTAL (Costs):	\$ 69,439,222	\$ 40,981,304	\$ 20,434,721	\$ 130,855,247
CONTRACTOR MARK-UP (OH&P):	\$ 11,153,260	\$ 6,569,155	\$ 3,139,930	\$ 20,862,345
SUBTOTAL:	\$ 80,592,482	\$ 47,550,459	\$ 23,574,651	\$ 151,717,593
CONTINGENCY ON ENTIRE PROJECT	\$ 16,118,496	\$ 9,510,092	\$ 4,714,930	\$ 30,343,519
TOTAL:	\$ 96,710,979	\$ 57,060,551	\$ 28,289,582	\$ 182,061,111

Description of Work: New 345 kV four (4) breaker ring bus station. The station will have three (3) four (4) 345/ 138 kV autotransformers that will connect into the expanded Northport 138kV that will be required for the OSW developers to build in order to reliably interconnect into the LIPA 138 kV system

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 - New Northport 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 32,400	\$ 21,600	\$ 54,000
1.2	Demolition	1	LS	-	15,000.00	10,000.00	\$ -	\$ 15,000	\$ 10,000	\$ 25,000
1.3	New Access Road - 20'	2,828	SY	4.85	7.20	4.80	\$ 13,714	\$ 20,359	\$ 13,573	\$ 47,646
1.4	Strip and Dispose Top Soil	4,840	CY		24.50	10.50	\$ -	\$ 118,580	\$ 50,820	\$ 169,400
1.5	Site Grading- Excavation for Substation Pad	16,682	CY		9.00	6.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,252	CY		21.00	9.00	\$ -	\$ 47,293.68	\$ 20,268.72	\$ 67,562.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	20,269	CY		2.40	1.60	\$ -	\$ 48,645	\$ 32,430	\$ 81,075
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,252	CY	25.00	2.40	1.60	\$ 56,302	\$ 5,405	\$ 3,603	\$ 65,310
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	25,023	SY	-	6.00	4.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.11	Site Surfacing - Aggregate 6" Thick	25,023	SY	8.25	4.50	3.00	\$ 206,441	\$ 112,604	\$ 75,069	\$ 394,114
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,445	LF	13.85	13.85	6.92	\$ 20,010	\$ 20,010	\$ 10,005	\$ 50,026
1.13	30' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	\$ 8,100	\$ 3,245	\$ 1,305	\$ 12,650
1.14	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	331,670.40	96,000.00	45,300.00	\$ 331,670	\$ 96,000	\$ 45,300	\$ 472,970
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,207	LF	2.41	3.16	0.72	\$ 5,318	\$ 6,973	\$ 1,589	\$ 13,879
1.18	Temporary fencing	1,471	LF	7.50	5.25	2.25	\$ 11,033	\$ 7,723	\$ 3,310	\$ 22,065

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	198	SY	19.50	26.00	19.50	\$ 3,863	\$ 5,151	\$ 3,863	\$ 12,877
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 660,771	\$ 842,577	\$ 494,090	\$ 1,997,437
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	\$ 62,681	\$ 71,635	\$ 44,772	\$ 179,088
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	251	CY	703.89	804.44	502.78	\$ 176,534	\$ 201,754	\$ 126,096	\$ 504,384
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	1,312	CY	703.89	804.44	502.78	\$ 923,497	\$ 1,055,425	\$ 659,641	\$ 2,638,563
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	180	CY	703.89	804.44	502.78	\$ 126,699	\$ 144,799	\$ 90,500	\$ 361,998
2.23	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.24	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	\$ 132,330	\$ 151,235	\$ 94,522	\$ 378,087
2.25	345kV Cap Bank-250MVR	400	CY	703.89	804.44	502.78	\$ 281,462	\$ 321,671	\$ 201,045	\$ 804,179
2.26	345kV Cap Bank-Reactor	83	CY	703.89	804.44	502.78	\$ 58,662	\$ 67,042	\$ 41,901	\$ 167,605
2.27	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Disconnect Switch	97	CY	703.89	804.44	502.78	\$ 68,249	\$ 77,999	\$ 48,749	\$ 194,996
2.33	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.34	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.37	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame -SHARED COLUMN (2 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Firewall Foundation	776	CY	703.89	804.44	502.78	\$ 546,327	\$ 624,374	\$ 390,234	\$ 1,560,935
2.41	Precast Firewall for transformer, PARs, reactors	11,940	SF	25.00	15.00	10.00	\$ 298,500	\$ 179,100	\$ 119,400	\$ 597,000
2.42	Precast Concrete Piles-12"X80'	1,028	EA	18,000.00	3,200.00	2,800.00	\$ 18,504,000	\$ 3,289,600	\$ 2,878,400	\$ 24,672,000
2.43	Local Control Cabinet foundation	7	CY	703.89	804.44	502.78	\$ 4,693	\$ 5,363	\$ 3,352	\$ 13,407
2.44	Precast Arch. Wall foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.45	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.46	345KV GIS Sub Slab	470	CY	703.89	804.44	502.78	\$ 330,762.60	\$ 378,014.40	\$ 236,259.00	\$ 945,036.00
TOTAL - 345KV FOUNDATION							\$ 21,627,603	\$ 6,697,390	\$ 5,015,731	\$ 33,340,724
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	\$ 117,000	\$ 70,200	\$ 46,800	\$ 234,000
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	19	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch	4	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.24	138kV, H Frame -SHARED COLUMN (2 BAY)	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings		LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.27	Steel grating and support beams-transformer moat	173,120	LB	2.73	1.17	0.50	\$ 472,932	\$ 202,377	\$ 86,733	\$ 762,043
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 710,182	\$ 344,727	\$ 181,633	\$ 1,236,543
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	4	EA	4,420,000.00	3,520.00	880.00	\$ 17,680,000	\$ 14,080	\$ 3,520	\$ 17,697,600
4.9	Transport & Testing- Transformer	4	EA		717,400.00	474,600.00	\$ -	\$ 2,869,600	\$ 1,898,400	\$ 4,768,000
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	9	EA	1,246,110.72	747,666.43	498,444.29	\$ 11,214,997	\$ 6,728,998	\$ 4,485,999	\$ 22,429,993
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	3	Banks	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.19	345kV Cap Bank & Reactor	3	EA	1500000	900000	600000	\$ 4,500,000	\$ 2,700,000	\$ 1,800,000	\$ 9,000,000
4.20	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Shunt Reactor with oil containment-150MVAR	0			3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.23	Transport & Testing- Shunt reactor, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Disconnect Switch	4	EA	37,700.00	11,875.50	5,089.50	\$ 150,800	\$ 47,502	\$ 20,358	\$ 218,660
4.26	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.27	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.28	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.29	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.30	345kV Gas-Insulated Bus Conductor	2,205	LF	550.00	275.00	82.50				\$ -
4.31	345kV Gas-Insulated Bus Conductor-elbow	49	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 34,283,699	\$ 12,530,560	\$ 8,281,297	\$ 55,095,555
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	49,500	LF	5.30	1.43	0.29	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6.2	Conduit, PVC, 4", SCH 40	8,400	LF	11.15	10.80	5.40	\$ 93,660	\$ 90,720	\$ 45,360	\$ 229,740
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	1,288	LF	266.50	53.04	13.26	\$ 343,119	\$ 68,289	\$ 17,072	\$ 428,480
6.7	345kV UG- Conduit	3,000	LF	266.73	202.15	100.00	\$ 800,193	\$ 606,439	\$ 300,015	\$ 1,706,647
6.8	345kV UG- Cable	20,000	LF	167.00	100.20	66.80	\$ 3,340,000	\$ 2,004,000	\$ 1,336,000	\$ 6,680,000
6.9	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	Fiber Optic Cable	3,000	LF	7.40	3.33	2.22	\$ 22,191	\$ 9,992	\$ 6,661	\$ 38,844
6.12	Ground Continuity Conductor	3,000	LF	13.04	7.53	5.02	\$ 39,117	\$ 22,581	\$ 15,054	\$ 76,752
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,805,109	\$ 2,861,100	\$ 1,737,042	\$ 9,403,251
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	14,880	LF	2.09	3.42	1.46	\$ 31,114	\$ 50,820	\$ 21,780	\$ 103,714
7.2	Caweld, DSA, 4/0 , T, CROSS	405	EA	165.00	75.00		\$ 66,825	\$ 30,375	\$ -	\$ 97,200
7.3	Ground Rod, 3/4" x 15'	364	EA	135.00	67.50	7.50	\$ 49,140	\$ 24,570	\$ 2,730	\$ 76,440
TOTAL - GROUND GRID							\$ 147,079	\$ 105,765	\$ 24,510	\$ 277,354
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	\$ 275,716	\$ 193,001	\$ 82,715	\$ 551,432
8.2	Primary Cap Bank Relays: SEL-487V		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Cap Bank Relays: GE C70		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 585,716	\$ 493,301	\$ 211,415	\$ 1,290,432
8 - New Northport 345/138 kV Substation							\$ 63,082,386	\$ 23,946,328	\$ 15,959,899	\$ 102,988,613

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,004,193.06	430,368.45	\$ -	\$ 1,004,193	\$ 430,368	\$ 1,434,562
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		805,586.20		\$ -	\$ 805,586	\$ -	\$ 805,586
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,222,344.78		\$ -	\$ 3,222,345	\$ -	\$ 3,222,345
9.4	Utility PM and Project Oversight	1.0	LS		805,586.20		\$ -	\$ 805,586	\$ -	\$ 805,586
9.5	Site Accommodation, Facilities, Storage	1.0	LS	805,586.20			\$ 805,586	\$ -	\$ -	\$ 805,586
	Engineering									
9.6	Design Engineering	1.00	LS		6,444,689.56		\$ -	\$ 6,444,690	\$ -	\$ 6,444,690
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		563,910.34		\$ -	\$ 563,910	\$ -	\$ 563,910
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,020,948.23		\$ -	\$ 3,020,948	\$ -	\$ 3,020,948
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		805,586.20		\$ -	\$ 805,586	\$ -	\$ 805,586
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		241,675.86		\$ -	\$ 241,676	\$ -	\$ 241,676
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			385,606.00	\$ -	\$ -	\$ 385,606	\$ 385,606
9.17	Legal Fees (Real estate)	1.00	LS		-	11,568.18	\$ -	\$ -	\$ 11,568	\$ 11,568
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,640,000	\$ -	\$ -	\$ 3,640,000	\$ 3,640,000
9.20	Sales Tax on Materials	8.80%	LS	63,082,385.68			\$ 5,551,250	\$ -	\$ -	\$ 5,551,250
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		102,988.61		\$ -	\$ 102,989	\$ -	\$ 102,989
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,356,836	\$ 17,034,976	\$ 4,474,823	\$ 27,866,635

Propel NY - TO53 AS7

9 - Existing EGC 345 kV Upgrade

Total: \$ 28,164,128

Propel NY - TO53 AS7										
		Material Supply	Labor Supply	Equip Supply	Total					
9 - Existing EGC 345 kV Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL		\$ -	\$ 12,000	\$ 8,000	\$ 20,000					
2. SUBSTATION FOUNDATIONS		\$ 404,484	\$ 462,267	\$ 288,917	\$ 1,155,667					
3. SUBSTATION STRUCTURES		\$ 193,347	\$ 102,423	\$ 56,236	\$ 352,006					
4. MAJOR EQUIPMENT		\$ 3,759,960	\$ 974,686	\$ 644,658	\$ 5,379,304					
5. LOW VOLTAGE & CONTROL CABLE		\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711					
6. CONDUIT & CABLE TRENCH		\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665					
7. GROUND GRID		\$ -	\$ -	\$ -	\$ -					
8. CONTROL ENCLOSURE		\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625					
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 480,017	\$ 1,226,433	\$ 11,054,413	\$ 12,760,863					
Turnkey cost (HVDC, GIS)		\$ 1,130,444	\$ 678,266	\$ 452,178	\$ 2,260,888					
Non-Turnkey cost		\$ 3,968,070	\$ 2,245,583	\$ 11,645,302	\$ 17,858,954					
SUBTOTAL (Costs):		\$ 5,098,514	\$ 2,923,849	\$ 12,097,479	\$ 20,119,842					
CONTRACTOR MARK-UP (OH&P):		\$ 782,079	\$ 444,901	\$ 2,123,285	\$ 3,350,265					
SUBTOTAL:		\$ 5,880,593	\$ 3,368,750	\$ 14,220,764	\$ 23,470,107					
CONTINGENCY ON ENTIRE PROJECT		\$ 1,176,119	\$ 673,750	\$ 2,844,153	\$ 4,694,021					
TOTAL:		\$ 7,056,711	\$ 4,042,500	\$ 17,064,917	\$ 28,164,128					
Description of Work: Upgrades to the existing New York										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 - Existing EGC 345 kV Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	\$ -	\$ 12,000	\$ 8,000	\$ 20,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	0	LS	140,319.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 12,000	\$ 8,000	\$ 20,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.23	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.41	Precast Arch. Wall foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.42	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.43	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 404,484	\$ 462,267	\$ 288,917	\$ 1,155,667
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 193,347	\$ 102,423	\$ 56,236	\$ 352,006
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	9	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	1	EA		292,900.00	191,600.00	\$ -	\$ 292,900	\$ 191,600	\$ 484,500
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	1	EA	1,130,443.86	678,266.31	452,177.54	\$ 1,130,444	\$ 678,266	\$ 452,178	\$ 2,260,888
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	120	LF	550.00	275.00	82.50				\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	3	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,759,960	\$ 974,686	\$ 644,658	\$ 5,379,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	24,900	LF	5.30	1.43	0.29	\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,900	LF	11.15	10.80	5.40	\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH		-					\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	427,571.55	299,300.08	128,271.46	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.13	125VDC Battery System		LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	Control house AC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9 - Existing EGC 345 kV_ Upgrade							\$ 4,618,496	\$ 1,697,415	\$ 1,043,066	\$ 7,358,978
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		56,351.33	24,150.57	\$ -	\$ 56,351	\$ 24,151	\$ 80,502
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		73,589.78		\$ -	\$ 73,590	\$ -	\$ 73,590
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		294,359.13		\$ -	\$ 294,359	\$ -	\$ 294,359
9.4	Utility PM and Project Oversight	1.0	LS		73,589.78		\$ -	\$ 73,590	\$ -	\$ 73,590
9.5	Site Accommodation, Facilities, Storage	1.0	LS	73,589.78			\$ 73,590	\$ -	\$ -	\$ 73,590
	Engineering									
9.6	Design Engineering	1.00	LS		407,847.24		\$ -	\$ 407,847	\$ -	\$ 407,847
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		35,686.63		\$ -	\$ 35,687	\$ -	\$ 35,687
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		191,178.39		\$ -	\$ 191,178	\$ -	\$ 191,178
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		50,980.90		\$ -	\$ 50,981	\$ -	\$ 50,981
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,294.27		\$ -	\$ 15,294	\$ -	\$ 15,294
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			10,156,468.00	\$ -	\$ -	\$ 10,156,468	\$ 10,156,468
9.17	Legal Fees (Real estate)	1.00	LS		-	304,694.04	\$ -	\$ -	\$ 304,694	\$ 304,694
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	4,618,496.23			\$ 406,428	\$ -	\$ -	\$ 406,428
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,358.98		\$ -	\$ 7,359	\$ -	\$ 7,359
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 480,017	\$ 1,226,433	\$ 11,054,413	\$ 12,760,863

Propel NY - TO53 AS7

10 - Existing 345 kV Tremont Substation GIS Interconnection

Total: \$ 32,771,373

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
10 - Existing 345 kV Tremont Substation_GIS_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS	\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH	\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID	\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE	\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283
Turnkey cost (HVDC, GIS)	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
Non-Turnkey cost	\$ 4,776,525	\$ 3,457,247	\$ 1,770,071	\$ 10,003,843
SUBTOTAL (Costs):	\$ 12,090,177	\$ 7,845,439	\$ 4,695,532	\$ 24,631,147
CONTRACTOR MARK-UP (OH&P):	\$ 1,298,594	\$ 885,596	\$ 494,140	\$ 2,678,330
SUBTOTAL:	\$ 13,388,771	\$ 8,731,035	\$ 5,189,672	\$ 27,309,477
CONTINGENCY ON ENTIRE PROJECT	\$ 2,677,754	\$ 1,746,207	\$ 1,037,934	\$ 5,461,895
TOTAL:	\$ 16,066,525	\$ 10,477,241	\$ 6,227,606	\$ 32,771,373

Description of Work: The existing Consolidated Edison Company of New York, Inc. (“Con Edison”) Tremont Substation, located in the Borough of the Bronx, New York City, Bronx County. Tremont Substation is an existing 345 kV AIS substation fed by a single underground 345 kV Line, X-28, which is a Con Edison transmission circuit. The X-28 circuit is connected to a common rigid bus that feeds two (2) 345 kV / 138 kV transformers in parallel. The Solution consists of the termination of a new 345 kV circuit, which requires installing a new 345 kV GIS six-position ring bus within the existing fence-line of the substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10 - Existing 345 kV Tremont Substation_GIS_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	\$ -	\$ 300,000	\$ 200,000	\$ 500,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	446,976.00	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	825	LF	2.41	3.16	0.72	\$ 1,988	\$ 2,607	\$ 594	\$ 5,189
1.18	Temporary fencing	300	LF	7.50	5.25	2.25	\$ 2,250	\$ 1,575	\$ 675	\$ 4,500
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 4,238	\$ 304,182	\$ 201,269	\$ 509,689
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.8	345kV, GIS to air bushing	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.9	345kV, GIS support-1 Ph	45	CY	703.89	804.44	502.78	\$ 31,436	\$ 35,926	\$ 22,454	\$ 89,816
2.10	345kV, GIS support-3 Ph	79	CY	703.89	804.44	502.78	\$ 55,748	\$ 63,712	\$ 39,820	\$ 159,279
2.11	345kV, GIS Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	125	CY	703.89	804.44	502.78	\$ 87,986	\$ 100,555	\$ 62,847	\$ 251,388
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	93	EA	18,000.00	3,200.00	2,800.00	\$ 1,674,000	\$ 297,600	\$ 260,400	\$ 2,232,000
2.33	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 2,073,430	\$ 754,091	\$ 545,707	\$ 3,373,228
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	12	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	9	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	11	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16				\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.22	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.4	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.5	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.6	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.8	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,218,942.00	731,365.20	487,576.80	\$ 7,313,652	\$ 4,388,191	\$ 2,925,461	\$ 14,627,304
4.13	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.15	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.16	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.17	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	\$ 520,000	\$ 91,000	\$ 39,000	\$ 650,000
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 7,833,652	\$ 4,479,191	\$ 2,964,461	\$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	23,400	LF	5.30	1.43	0.29	\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 123,962	\$ 33,521	\$ 6,704	\$ 164,186
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	\$ 40,140	\$ 38,880	\$ 19,440	\$ 98,460
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	\$ 99,938	\$ 19,890	\$ 4,973	\$ 124,800
6.7										
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 140,078	\$ 58,770	\$ 24,413	\$ 223,260
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,452	LF	2.09	3.42	1.46	\$ 3,036	\$ 4,959	\$ 2,125	\$ 10,120
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		\$ 7,425	\$ 3,375	\$ -	\$ 10,800
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	\$ 4,320	\$ 2,160	\$ 240	\$ 6,720
TOTAL - GROUND GRID							\$ 14,781	\$ 10,494	\$ 2,365	\$ 27,640
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	171,028.62	119,720.03	51,308.59	\$ 171,029	\$ 119,720	\$ 51,309	\$ 342,057
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annunciator	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 859,778	\$ 723,020	\$ 255,759	\$ 1,838,557
10 - Existing 345 kV Tremont Substation_GIS_Interconnection							\$ 11,049,919	\$ 6,363,269	\$ 4,000,677	\$ 21,413,864
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		106,760.29	45,754.41	\$ -	\$ 106,760	\$ 45,754	\$ 152,515
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		271,462.42		\$ -	\$ 271,462	\$ -	\$ 271,462
9.4	Utility PM and Project Oversight	1.0	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.5	Site Accommodation, Facilities, Storage	1.0	LS	67,865.60			\$ 67,866	\$ -	\$ -	\$ 67,866
	Engineering									
9.6	Design Engineering	1.00	LS		542,924.84		\$ -	\$ 542,925	\$ -	\$ 542,925
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		47,505.92		\$ -	\$ 47,506	\$ -	\$ 47,506
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		254,496.02		\$ -	\$ 254,496	\$ -	\$ 254,496
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,865.60		\$ -	\$ 67,866	\$ -	\$ 67,866
9.13	Environmental-special studies/investigation		LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		20,359.68		\$ -	\$ 20,360	\$ -	\$ 20,360
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			83,963.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	2,518.89	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 640,000	\$ -	\$ -	\$ 640,000	\$ 640,000
9.20	Sales Tax on Materials	8.80%	LS	11,049,918.55			\$ 972,393	\$ -	\$ -	\$ 972,393
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		21,413.86		\$ -	\$ 21,414	\$ -	\$ 21,414
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,040,258	\$ 1,482,170	\$ 694,854	\$ 3,217,283

Propel NY - TO53 AS7

11 - Existing Sprain Brook 345 kV Interconnection

Total: \$ 31,348,450

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
11 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 110,491	\$ 101,757	\$ 56,125	\$ 268,373
2. SUBSTATION FOUNDATIONS	\$ 570,093	\$ 651,534	\$ 407,209	\$ 1,628,836
3. SUBSTATION STRUCTURES	\$ 328,438	\$ 373,743	\$ 232,011	\$ 934,192
4. MAJOR EQUIPMENT	\$ 8,550,059	\$ 3,253,026	\$ 2,142,122	\$ 13,945,207
5. LOW VOLTAGE & CONTROL CABLE	\$ 103,301	\$ 27,934	\$ 5,587	\$ 136,822
6. CONDUIT & CABLE TRENCH	\$ 806,430	\$ 426,161	\$ 224,296	\$ 1,456,887
7. GROUND GRID	\$ 34,349	\$ 24,608	\$ 5,650	\$ 64,607
8. CONTROL ENCLOSURE	\$ 426,562	\$ 341,250	\$ 85,312	\$ 853,125
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,059,143	\$ 2,080,467	\$ 682,810	\$ 3,822,420
Turnkey cost (HVDC, GIS)	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
Non-Turnkey cost	\$ 7,211,188	\$ 4,413,873	\$ 1,930,050	\$ 13,555,111
SUBTOTAL (Costs):	\$ 11,988,866	\$ 7,280,480	\$ 3,841,121	\$ 23,110,467
CONTRACTOR MARK-UP (OH&P):	\$ 1,584,674	\$ 966,494	\$ 462,073	\$ 3,013,241
SUBTOTAL:	\$ 13,573,540	\$ 8,246,974	\$ 4,303,195	\$ 26,123,708
CONTINGENCY ON ENTIRE PROJECT	\$ 2,714,708	\$ 1,649,395	\$ 860,639	\$ 5,224,742
TOTAL:	\$ 16,288,248	\$ 9,896,369	\$ 5,163,834	\$ 31,348,450

Description of Work: Interconnection Facilities to the existing Con Edison Sprain Brook Substation, located in the City of Yonkers, Westchester County. Sprain Brook Substation is an existing 345 kV AIS substation with a breaker and a half (“BAAH”) configuration. The solution includes installing a new underground 345 kV line with a shunt reactor in new bay position and a second 345 kV underground interconnection with the adjacent HVDC converter station										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11 - Existing Sprain Brook 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.4	ACRE	-	10,800.00	7,200.00	\$ -	\$ 4,320	\$ 2,880	\$ 7,200
1.2	Demolition	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	481	SY	4.85	7.20	4.80	\$ 2,333	\$ 3,464	\$ 2,309	\$ 8,107
1.4	Strip and Dispose Top Soil	645	CY		24.50	10.50	\$ -	\$ 15,811	\$ 6,776	\$ 22,587
1.5	Site Grading- Excavation for Substation Pad	1,936	CY		9.00	6.00	\$ -	\$ 17,424	\$ 11,616	\$ 29,040
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,045	CY		21.00	9.00	\$ -	\$ 21,954.24	\$ 9,408.96	\$ 31,363.20
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,568	CY		2.40	1.60	\$ -	\$ 3,764	\$ 2,509	\$ 6,273
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,045	CY	25.00	2.40	1.60	\$ 26,136	\$ 2,509	\$ 1,673	\$ 30,318
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	1,936	SY	11.00	6.00	4.00	\$ 21,296	\$ 11,616	\$ 7,744	\$ 40,656
1.11	Site Surfacing - Aggregate 6" Thick	1,936	SY	16.50	4.50	3.00	\$ 31,944	\$ 8,712	\$ 5,808	\$ 46,464
1.12	7' Station Fence w/ Barbed Wire & Grounding	350	LF	13.85	13.85	6.92	\$ 4,847	\$ 4,847	\$ 2,423	\$ 12,117
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	1	LS	20,044.80	3,840.00	1,812.00	\$ 20,045	\$ 3,840	\$ 1,812	\$ 25,697
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$ 1,265	\$ 1,659	\$ 378	\$ 3,302

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$ 2,625	\$ 1,838	\$ 788	\$ 5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 110,491	\$ 101,757	\$ 56,125	\$ 268,373
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	144	CY	703.89	804.44	502.78	\$ 101,205	\$ 115,662	\$ 72,289	\$ 289,156
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	37	CY	703.89	804.44	502.78	\$ 25,720	\$ 29,394	\$ 18,371	\$ 73,486
2.8	345kV, GIS to air bushing	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.9	345kV, GIS support-1 Ph	24	CY	703.89	804.44	502.78	\$ 17,147	\$ 19,596	\$ 12,248	\$ 48,990
2.10	345kV, GIS support-3 Ph	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.11	345kV, GIS Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.12	345kV, Cable sealing end	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.20	345kV, Circuit Breaker (GIS), outdoor rated	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'		EA							
2.33	Local Control Cabinet foundation	3	CY	703.89	804.44	502.78	\$ 2,086	\$ 2,384	\$ 1,490	\$ 5,959
TOTAL - 345KV FOUNDATION							\$ 570,093	\$ 651,534	\$ 407,209	\$ 1,628,836
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	13	EA	8,346.00	5,758.74	3,839.16	\$ 108,498	\$ 74,864	\$ 49,909	\$ 233,271
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	9	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.12	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	\$ 16,692	\$ 11,517	\$ 7,678	\$ 35,888
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	AL. Bus Tubing, 5" SCH 80	1,021	LF	25.00	184.94	123.29	\$ 25,525	\$ 188,822	\$ 125,881	\$ 340,228
3.22	AL. Bus fittings	1	LS	30,630.00	30,630.00	15,315.00	\$ 30,630	\$ 30,630	\$ 15,315	\$ 76,575
3.23	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 328,438	\$ 373,743	\$ 232,011	\$ 934,192
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	9	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	6	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	6	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	\$ 162,864	\$ 32,760	\$ 14,040	\$ 209,664
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	1	EA		292,900.00	191,600.00	\$ -	\$ 292,900	\$ 191,600	\$ 484,500
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	1	EA	980,000.00	57,239.00	24,531.00	\$ 980,000	\$ 57,239	\$ 24,531	\$ 1,061,770
4.15	345kV, Circuit Breaker (GIS), outdoor rated	4	EA	1,194,419.50	716,651.70	477,767.80	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor	564	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	10	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 8,550,059	\$ 3,253,026	\$ 2,142,122	\$ 13,945,207

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	19,500	LF	5.30	1.43	0.29	\$ 103,301	\$ 27,934	\$ 5,587	\$ 136,822
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 103,301	\$ 27,934	\$ 5,587	\$ 136,822
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	3,000	LF	11.15	10.80	5.40	\$ 33,450	\$ 32,400	\$ 16,200	\$ 82,050
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	500	LF	266.50	53.04	13.26	\$ 133,250	\$ 26,520	\$ 6,630	\$ 166,400
6.7	345kV UG- Conduit	600	LF	266.73	202.15	100.00	\$ 160,039	\$ 121,288	\$ 60,003	\$ 341,329
6.8	345kV UG- Cable	1,800	LF	167.00	100.20	66.80	\$ 300,600	\$ 180,360	\$ 120,240	\$ 601,200
6.9	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	Fiber Optic Cable	600	LF	7.40	3.33	2.22	\$ 4,438	\$ 1,998	\$ 1,332	\$ 7,769
6.12	Ground Continuity Conductor	600	LF	13.04	7.53	5.02	\$ 7,823	\$ 4,516	\$ 3,011	\$ 15,350
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 806,430	\$ 426,161	\$ 224,296	\$ 1,456,887
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,450	LF	2.09	3.42	1.46	\$ 7,214	\$ 11,783	\$ 5,050	\$ 24,047
7.2	Caweld, DSA, 4/0 , T, CROSS	99	EA	165.00	75.00		\$ 16,335	\$ 7,425	\$ -	\$ 23,760
7.3	Ground Rod, 3/4" x 15'	80	EA	135.00	67.50	7.50	\$ 10,800	\$ 5,400	\$ 600	\$ 16,800
TOTAL - GROUND GRID							\$ 34,349	\$ 24,608	\$ 5,650	\$ 64,607
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	Primary Bus Differential Relays: SEL-487B	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.9	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.12	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.13	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.14	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 426,562	\$ 341,250	\$ 85,312	\$ 853,125
11 - Existing Sprain Brook 345 kV_ Interconnection							\$ 10,929,723	\$ 5,200,013	\$ 3,158,312	\$ 19,288,048
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		125,322.63	53,709.70	\$ -	\$ 125,323	\$ 53,710	\$ 179,032
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		97,326.92		\$ -	\$ 97,327	\$ -	\$ 97,327
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		389,307.66		\$ -	\$ 389,308	\$ -	\$ 389,308
9.4	Utility PM and Project Oversight	1.0	LS		97,326.92		\$ -	\$ 97,327	\$ -	\$ 97,327
9.5	Site Accommodation, Facilities, Storage	1.0	LS	97,326.92			\$ 97,327	\$ -	\$ -	\$ 97,327
	Engineering									
9.6	Design Engineering	1.00	LS		778,615.33		\$ -	\$ 778,615	\$ -	\$ 778,615
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		68,128.84		\$ -	\$ 68,129	\$ -	\$ 68,129
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		364,975.93		\$ -	\$ 364,976	\$ -	\$ 364,976
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		97,326.92		\$ -	\$ 97,327	\$ -	\$ 97,327
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		29,198.07		\$ -	\$ 29,198	\$ -	\$ 29,198
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 620,000	\$ -	\$ -	\$ 620,000	\$ 620,000
9.20	Sales Tax on Materials	8.80%	LS	10,929,723.06			\$ 961,816	\$ -	\$ -	\$ 961,816
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		19,288.05		\$ -	\$ 19,288	\$ -	\$ 19,288
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,059,143	\$ 2,080,467	\$ 682,810	\$ 3,822,420

Propel NY - TO53 AS7

12 - Existing Ruland 138 kV Upgrade & Interconnection

Total: \$13,614,467

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Existing Ruland 138 kV_ Upgrade & Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$251,469	\$278,373	\$156,657	\$686,499
2. SUBSTATION FOUNDATIONS	\$965,636	\$756,155	\$488,597	\$2,210,388
3. SUBSTATION STRUCTURES	\$272,182	\$191,597	\$178,582	\$642,361
4. MAJOR EQUIPTMENT	\$2,060,025	\$328,518	\$138,222	\$2,526,765
5. LOW VOLTAGE & CONTROL CABLE	\$131,908	\$35,669	\$7,134	\$174,711
6. CONDUIT & CABLE TRENCH	\$324,073	\$225,017	\$106,737	\$655,827
7. GROUND GRID	\$28,699	\$20,592	\$4,732	\$54,023
8. CONTROL ENCLOSURE	\$170,625	\$136,500	\$34,125	\$341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$442,925	\$1,566,399	\$313,588	\$2,322,912
SUBTOTAL (Costs):	\$4,647,541	\$3,538,822	\$1,428,374	\$9,614,737
CONTRACTOR MARK-UP (OH&P)	\$836,557	\$636,988	\$257,107	\$1,730,653
SUBTOTAL:	\$5,484,099	\$4,175,810	\$1,685,481	\$11,345,389
CONTINGENCY ON ENTIRE PROJECT	\$1,096,820	\$835,162	\$337,096	\$2,269,078
TOTAL:	\$6,580,918	\$5,010,972	\$2,022,577	\$13,614,467

Description of Work: Upgrades and Potential Interconnection Facilities to the existing LIPA Ruland Road Substation, located in the Hamlet of Melville, Town of Huntington, Suffolk County. Ruland Road Substation is an existing 138 kV AIS substation configured with six (6) BAAH bays. The Solution includes installing three (3) air core reactors in series to the 138 kV Lines 138-561,138-562, and 138-567, respectively, which are proposed as Upgrades and two (2) 138 kV circuit breakers which are proposed as Potential Interconnection Facilities.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.2	ACRE	-	10,800.00	7,200.00	\$-	\$12,960	\$8,640	\$21,600
1.2	Demolition	1	LS	-	4,800.00	3,200.00	\$-	\$4,800	\$3,200	\$8,000
1.3	New Access Road - 20'	978	SY	4.85	7.20	4.80	\$4,742	\$7,040	\$4,693	\$16,476
1.4	Strip and Dispose Top Soil	1,936	CY		24.50	10.50	\$-	\$47,432	\$20,328	\$67,760
1.5	Site Grading- Excavation for Substation Pad	5,808	CY		9.00	6.00	\$-	\$52,272	\$34,848	\$87,120
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	3,136	CY		21.00	9.00	\$-	\$65,862.72	\$28,226.88	\$94,089.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	4,704	CY		2.40	1.60	\$-	\$11,291	\$7,527	\$18,818
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	3,136	CY	25.00	2.40	1.60	\$78,408	\$7,527	\$5,018	\$90,953
1.9	Blasting		EA				\$-	\$-	\$-	\$-
1.10	Install substation 8" pad base	5,808	SY	11.00	6.00	4.00	\$63,888	\$34,848	\$23,232	\$121,968
1.11	Site Surfacing - Aggregate 6" Thick	5,808	SY	16.50	4.50	3.00	\$95,832	\$26,136	\$17,424	\$139,392
1.12	7' Station Fence w/ Barbed Wire & Grounding	340	LF	13.85	13.85	6.92	\$4,708	\$4,708	\$2,354	\$11,771
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$-	\$-	\$-	\$-
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$-	\$-	\$-	\$-
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$-	\$-	\$-	\$-
1.16	Seeding	0	SF	1.50	1.50	1.00	\$-	\$-	\$-	\$-
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	\$1,265	\$1,659	\$378	\$3,302
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	\$2,625	\$1,838	\$788	\$5,250
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$-	\$-	\$-	\$-
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$-	\$-	\$-	\$-
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$-	\$-	\$-	\$-
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$251,469	\$278,373	\$156,657	\$686,499
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	\$ 6,257	\$ 7,151	\$ 4,469	\$ 17,876
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	218	CY	703.89	804.44	502.78	\$ 153,560	\$ 175,497	\$ 109,685	\$ 438,742
2.27	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.28	138kV, CCVT	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.29	138kV, Air core reactors (3 Ph)	249	CY	703.89	804.44	502.78	\$ 175,204	\$ 200,233	\$ 125,146	\$ 500,583
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	20	EA	18,000.00	3,200.00	2,800.00	\$ 360,000	\$ 64,000	\$ 56,000	\$ 480,000
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 965,636	\$ 756,155	\$ 488,597	\$ 2,210,388
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	9	EA	5,694.00	3,928.86	2,619.24	\$ 51,246	\$ 35,360	\$ 23,573	\$ 110,179
3.18	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.19	138kV, CCVT	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, Surge arrester	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	6	EA	21,450.00	12,870.00	17,160.00	\$ 128,700	\$ 77,220	\$ 102,960	\$ 308,880
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	126	LF	25.00	184.94	123.29	\$ 3,150	\$ 23,302	\$ 15,535	\$ 41,987
3.26	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	\$ 3,780	\$ 3,780	\$ 1,890	\$ 9,450

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 272,182	\$ 191,597	\$ 178,582	\$ 642,361
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	\$ 1,020,000	\$ 27,118	\$ 11,622	\$ 1,058,740
4.21	138kV, Disconnect Switch	9	EA	37,700.00	11,875.50	5,089.50	\$ 339,300	\$ 106,880	\$ 45,806	\$ 491,985
4.22	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.23	138kV, CCVT	6	EA	10,000.00	7,970.08	3,415.75	\$ 60,000	\$ 47,821	\$ 20,495	\$ 128,315
4.24	138kV, Air core reactors (3 Ph)	9	EA	46,833.00	6,500.00	2,500.00	\$ 421,497	\$ 58,500	\$ 22,500	\$ 502,497
4.25	138kV, Surge arrester	18	EA	4,446.00	4,200.00	1,800.00	\$ 80,028	\$ 75,600	\$ 32,400	\$ 188,028
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 2,060,025	\$ 328,518	\$ 138,222	\$ 2,526,765
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	24,900	LF	5.30	1.43	0.29	\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,250	LF	11.15	10.80	5.40	\$ 58,538	\$ 56,700	\$ 28,350	\$ 143,588
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	\$ 66,625	\$ 13,260	\$ 3,315	\$ 83,200
6.7	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.8	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.9	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.10	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.11	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
6.12		0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 324,073	\$ 225,017	\$ 106,737	\$ 655,827
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,900	LF	2.09	3.42	1.46	\$ 6,064	\$ 9,904	\$ 4,245	\$ 20,213
7.2	Caweld, DSA, 4/0 , T, CROSS	84	EA	165.00	75.00		\$ 13,860	\$ 6,300	\$ -	\$ 20,160
7.3	Ground Rod, 3/4" x 15'	65	EA	135.00	67.50	7.50	\$ 8,775	\$ 4,388	\$ 488	\$ 13,650
TOTAL - GROUND GRID							\$ 28,699	\$ 20,592	\$ 4,732	\$ 54,023
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
12 - Existing Ruland 138 kV_ Upgrade & Interconnection							\$ 4,204,617	\$ 1,972,423	\$ 1,114,785	\$ 7,291,825

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		108,052.28	46,308.12	\$ -	\$ 108,052	\$ 46,308	\$ 154,360
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		291,672.99		\$ -	\$ 291,673	\$ -	\$ 291,673
9.4	Utility PM and Project Oversight	1.0	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.5	Site Accommodation, Facilities, Storage	1.0	LS	72,918.25			\$ 72,918	\$ -	\$ -	\$ 72,918
	Engineering									
9.6	Design Engineering	1.00	LS		583,345.98		\$ -	\$ 583,346	\$ -	\$ 583,346
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		51,042.77		\$ -	\$ 51,043	\$ -	\$ 51,043
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		273,443.43		\$ -	\$ 273,443	\$ -	\$ 273,443
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		21,875.47		\$ -	\$ 21,875	\$ -	\$ 21,875
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			63,815.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	1,914.45	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	4,204,616.61			\$ 370,006	\$ -	\$ -	\$ 370,006
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,291.82		\$ -	\$ 7,292	\$ -	\$ 7,292
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 442,925	\$ 1,566,399	\$ 313,588	\$ 2,322,912

Propel NY - TO53 AS7

13 -Existing Shore Road 138 kV Interconnection

Total: \$ 17,527,679

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
13 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 763,029	\$ 594,091	\$ 384,107	\$ 1,741,227
3. SUBSTATION STRUCTURES	\$ 438,491	\$ 427,288	\$ 268,027	\$ 1,133,806
4. MAJOR EQUIPMENT	\$ 3,977,637	\$ 403,988	\$ 221,795	\$ 4,603,420
5. LOW VOLTAGE & CONTROL CABLE	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
6. CONDUIT & CABLE TRENCH	\$ 259,121	\$ 213,377	\$ 104,232	\$ 576,730
7. GROUND GRID	\$ 66,810	\$ 48,271	\$ 11,248	\$ 126,329
8. CONTROL ENCLOSURE	\$ 428,594	\$ 420,875	\$ 137,719	\$ 987,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 628,654	\$ 1,990,780	\$ 396,517	\$ 3,015,951
SUBTOTAL (Costs):	\$ 6,708,547	\$ 4,138,207	\$ 1,531,551	\$ 12,378,305
CONTRACTOR MARK-UP (OH&P)	\$ 1,207,538	\$ 744,877	\$ 275,679	\$ 2,228,095
SUBTOTAL:	\$ 7,916,085	\$ 4,883,084	\$ 1,807,231	\$ 14,606,399
CONTINGENCY ON ENTIRE PROJECT	\$ 1,583,217	\$ 976,617	\$ 361,446	\$ 2,921,280
TOTAL:	\$ 9,499,302	\$ 5,859,700	\$ 2,168,677	\$ 17,527,679

Description of Work: Interconnection Facilities to the existing LIPA Shore Road Substation, located in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. Shore Road Substation is an existing 138 kV AIS substation with a main-tie main configuration. The Solution includes installing two (2) additional circuit breakers to create a six (6) position ring bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 -Existing Shore Road 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Shunt Reactor with oil containment-50MVAR	95	CY	703.89	804.44	502.78	\$ 66,869	\$ 76,422	\$ 47,764	\$ 191,055
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	18	CY	703.89	804.44	502.78	\$ 12,514	\$ 14,301	\$ 8,938	\$ 35,753
2.26	138kV, Bus support-3 Ph, low	118	CY	703.89	804.44	502.78	\$ 82,847	\$ 94,683	\$ 59,177	\$ 236,706
2.27	138kV, Bus support-1 Ph, low	85	CY	703.89	804.44	502.78	\$ 60,013	\$ 68,587	\$ 42,867	\$ 171,466
2.28	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.29	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.30	138kV, CCVT	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.31	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.33	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.34	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.37	Precast Concrete Piles-12"X80'	16	EA	18,000.00	3,200.00	2,800.00	\$ 288,000	\$ 51,200	\$ 44,800	\$ 384,000
2.38	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39										
2.40										
TOTAL - 345KV FOUNDATION							\$ 763,029	\$ 594,091	\$ 384,107	\$ 1,741,227
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	11	EA	4,173.00	2,879.76	1,919.84	\$ 45,903	\$ 31,677	\$ 21,118	\$ 98,699
3.16	138kV, Bus support-1 Ph, low	21	EA	2,782.00	1,919.84	1,279.89	\$ 58,422	\$ 40,317	\$ 26,878	\$ 125,616
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	9	EA	3,206.67	1,924.00	1,282.67	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.21	138kV, A Frame 50'	3	EA	33,000.00	19,800.00	13,200.00	\$ 99,000	\$ 59,400	\$ 39,600	\$ 198,000
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	957	LF	25.00	184.94	123.29	\$ 23,925	\$ 176,986	\$ 117,990	\$ 318,901
3.24	AL. Bus fittings	1	LS	28,710.00	28,710.00	14,355.00	\$ 28,710	\$ 28,710	\$ 14,355	\$ 71,775
3.25	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 438,491	\$ 427,288	\$ 268,027	\$ 1,133,806
4. MAJOR EQUIPMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-50MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Shunt Reactor with oil containment-50MVAR	1	EA	1,710,761.00	3,520.00	880.00	\$ 1,710,761	\$ 3,520	\$ 880	\$ 1,715,161
4.20	Transport & Testing- Shunt Reactor, 138kV	1	EA		222,400.00	144,600.00	\$ -	\$ 222,400	\$ 144,600	\$ 367,000
4.21	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Circuit Breaker (PASS)	4	EA	510,000.00	13,559.00	5,811.00	\$ 2,040,000	\$ 54,236	\$ 23,244	\$ 2,117,480
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300
4.26	138kV, CCVT	9	EA	10,000.00	7,970.08	3,415.75	\$ 90,000	\$ 71,731	\$ 30,742	\$ 192,473
4.27	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.28	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.29	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.31	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,977,637	\$ 403,988	\$ 221,795	\$ 4,603,420
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	27,600	LF	5.30	1.43	0.29	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	5,400	LF	11.15	10.80	5.40	\$ 60,210	\$ 58,320	\$ 29,160	\$ 147,690
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.8	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.9	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.10	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.11	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
TOTAL - CONDUIT & CABLE TRENCH							\$ 259,121	\$ 213,377	\$ 104,232	\$ 576,730
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,865	LF	2.09	3.42	1.46	\$ 14,355	\$ 23,446	\$ 10,048	\$ 47,849
7.2	Caweld, DSA, 4/0 , T, CROSS	187	EA	165.00	75.00		\$ 30,855	\$ 14,025	\$ -	\$ 44,880
7.3	Ground Rod, 3/4" x 15'	160	EA	135.00	67.50	7.50	\$ 21,600	\$ 10,800	\$ 1,200	\$ 33,600
TOTAL - GROUND GRID		-					\$ 66,810	\$ 48,271	\$ 11,248	\$ 126,329
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.5	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.8	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 428,594	\$ 420,875	\$ 137,719	\$ 987,187
13 -Existing Shore Road 138 kV_ Interconnection							\$ 6,079,892	\$ 2,147,426	\$ 1,135,035	\$ 9,362,353
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		114,886.13	49,236.91	\$ -	\$ 114,886	\$ 49,237	\$ 164,123
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		374,494.13		\$ -	\$ 374,494	\$ -	\$ 374,494
9.4	Utility PM and Project Oversight	1.0	LS		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.5	Site Accommodation, Facilities, Storage	1.0	LS	93,623.53			\$ 93,624	\$ -	\$ -	\$ 93,624
	Engineering									
9.6	Design Engineering	1.00	LS		748,988.27		\$ -	\$ 748,988	\$ -	\$ 748,988
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		65,536.47		\$ -	\$ 65,536	\$ -	\$ 65,536
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		351,088.25		\$ -	\$ 351,088	\$ -	\$ 351,088
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		28,087.06		\$ -	\$ 28,087	\$ -	\$ 28,087
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			215,711.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	6,471.33	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 340,000	\$ -	\$ -	\$ 340,000	\$ 340,000
9.20	Sales Tax on Materials	8.80%	LS	6,079,892.49			\$ 535,031	\$ -	\$ -	\$ 535,031
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,362.35		\$ -	\$ 9,362	\$ -	\$ 9,362
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 628,654	\$ 1,990,780	\$ 396,517	\$ 3,015,951

Propel NY - TO53 AS7

14 -Existing Syosset 138 kV Interconnection

Total: \$ 23,416,431

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
14 -Existing Syosset 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES	\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPMENT	\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID	\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015
SUBTOTAL (Costs):	\$ 12,068,481	\$ 3,441,070	\$ 1,027,476	\$ 16,537,028
CONTRACTOR MARK-UP (OH&P)	\$ 2,172,327	\$ 619,393	\$ 184,946	\$ 2,976,665
SUBTOTAL:	\$ 14,240,808	\$ 4,060,463	\$ 1,212,422	\$ 19,513,693
CONTINGENCY ON ENTIRE PROJECT	\$ 2,848,162	\$ 812,093	\$ 242,484	\$ 3,902,739
TOTAL:	\$ 17,088,969	\$ 4,872,555	\$ 1,454,907	\$ 23,416,431

Description of Work: Interconnection Facilities to the existing LIPA Syosset Substation, located in the Hamlet of Syosset, Town of Oyster Bay, Nassau County. Syosset Substation is a 138 kV AIS substation with an eight (8) ring bus configuration. The Solution includes the installation of a new underground 138 kV line with a PAR in an existing spare line position.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
14 -Existing Syosset 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.27	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.20	138kV, Surge arrester	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	81	LF	25.00	184.94	123.29	\$ 2,025	\$ 14,980	\$ 9,987	\$ 26,992
3.26	AL. Bus fittings	1	LS	2,430.00	2,430.00	1,215.00	\$ 2,430	\$ 2,430	\$ 1,215	\$ 6,075
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,087,382.00	3,520.00	880.00	\$ 10,087,382	\$ 3,520	\$ 880	\$ 10,091,782
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.22	138kV, Cable sealing end	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.23	138kV, CCVT	3	EA	10,000.00	7,970.08	3,415.75	\$ 30,000	\$ 23,910	\$ 10,247	\$ 64,158
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	792	LF	2.09	3.42	1.46	\$ 1,656	\$ 2,705	\$ 1,159	\$ 5,520
7.2	Caweld, DSA, 4/0 , T, CROSS	41	EA	165.00	75.00		\$ 6,765	\$ 3,075	\$ -	\$ 9,840
7.3	Ground Rod, 3/4" x 15'	12	EA	135.00	67.50	7.50	\$ 1,620	\$ 810	\$ 90	\$ 2,520
TOTAL - GROUND GRID		-					\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (Pilot): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
14 -Existing Syosset 138 kV_ Interconnection							\$ 10,978,337	\$ 908,544	\$ 518,131	\$ 12,405,013
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		49,933.65	21,400.14	\$ -	\$ 49,934	\$ 21,400	\$ 71,334
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		496,200.52		\$ -	\$ 496,201	\$ -	\$ 496,201
9.4	Utility PM and Project Oversight	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.5	Site Accommodation, Facilities, Storage	1.0	LS	124,050.13			\$ 124,050	\$ -	\$ -	\$ 124,050
	Engineering									
9.6	Design Engineering	1.00	LS		992,401.04		\$ -	\$ 992,401	\$ -	\$ 992,401
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	5.00	EA		2,730.00	1,820.00	\$ -	\$ 13,650	\$ 9,100	\$ 22,750
9.9	Surveying/Staking	1.00	Site		86,835.09		\$ -	\$ 86,835	\$ -	\$ 86,835
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		465,187.99		\$ -	\$ 465,188	\$ -	\$ 465,188
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		37,215.04		\$ -	\$ 37,215	\$ -	\$ 37,215
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			18,296.00	\$ -	\$ -	\$ 18,296	\$ 18,296
9.17	Legal Fees (Real estate)	1.00	LS		-	548.88	\$ -	\$ -	\$ 549	\$ 549
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 460,000	\$ -	\$ -	\$ 460,000	\$ 460,000
9.20	Sales Tax on Materials	8.80%	LS	10,978,337.32			\$ 966,094	\$ -	\$ -	\$ 966,094
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,405.01		\$ -	\$ 12,405	\$ -	\$ 12,405
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015

Propel NY - TO53 AS7

15 - Existing Dunwoodie 345 kV Interconnection

Total: \$ 6,437,592

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
15 - Existing Dunwoodie 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 6,000	\$ 4,000	\$ 10,000.00
2. SUBSTATION FOUNDATIONS	\$ 65,518	\$ 74,877	\$ 46,798	\$ 187,193.19
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364.35
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410.00
7. GROUND GRID	\$ 7,144	\$ 4,651	\$ 868	\$ 12,662.59
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,624.92
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 227,120	\$ 331,384	\$ 127,224	\$ 685,728.42
Turnkey cost (HVDC, GIS)	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
Non-Turnkey cost	\$ 412,445	\$ 497,229	\$ 200,310	\$ 1,109,983
SUBTOTAL (Costs):	\$ 2,325,124	\$ 1,644,836	\$ 965,382	\$ 4,935,341
CONTRACTOR MARK-UP (OH&P):	\$ 189,001	\$ 158,358	\$ 81,960	\$ 429,319
SUBTOTAL:	\$ 2,514,124	\$ 1,803,194	\$ 1,047,342	\$ 5,364,660
CONTINGENCY ON ENTIRE PROJECT	\$ 502,825	\$ 360,639	\$ 209,468	\$ 1,072,932
TOTAL:	\$ 3,016,949	\$ 2,163,832	\$ 1,256,810	\$ 6,437,592

Description of Work: interconnection facilities to the existing ConEd Dunwoodie Substation, located in the City of Yonkers, Westchester County. The Dunwoodie Substation includes an existing 345 kV GIS six (6) breaker ring. It is proposed that an additional braker be added to the ring to allow for interconnection of the new underground line from the Eastern Queens substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
15 - Existing Dunwoodie 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	0	LS	140,319.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 6,000	\$ 4,000	\$ 10,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	73	CY	703.89	804.44	502.78	\$ 51,440	\$ 58,788	\$ 36,743	\$ 146,971
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.23	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors	-	SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.41	Precast Arch. Wall foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.42	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.43	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 65,518	\$ 74,877	\$ 46,798	\$ 187,193
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	18	EA	4,810.00	2,886.00	1,924.00				\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch - 3Ph	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Disconnect Switch-3 Ph	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.26	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA							
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end - 3 Ph	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	1	EA	1,912,679.00	1,147,607.40	765,071.60	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.26	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	547	LF	2.09	3.42	1.46	\$ 1,144	\$ 1,868	\$ 801	\$ 3,813
7.2	Caweld, DSA, 4/0 , T, CROSS	29	EA	165.00	75.00		\$ 4,785	\$ 2,175	\$ -	\$ 6,960
7.3	Ground Rod, 3/4" x 15'	9	EA	135.00	67.50	7.50	\$ 1,215	\$ 608	\$ 68	\$ 1,890
TOTAL - GROUND GRID							\$ 7,144	\$ 4,651	\$ 868	\$ 12,663
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
15 - Existing Dunwoodie 345 kV_ Interconnection							\$ 2,098,003	\$ 1,313,452	\$ 838,158	\$ 4,249,613
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		8,362.58	3,583.96	\$ -	\$ 8,363	\$ 3,584	\$ 11,947
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		42,496.13		\$ -	\$ 42,496	\$ -	\$ 42,496
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		169,984.52		\$ -	\$ 169,985	\$ -	\$ 169,985
9.4	Utility PM and Project Oversight	1.0	LS		42,496.13		\$ -	\$ 42,496	\$ -	\$ 42,496
9.5	Site Accommodation, Facilities, Storage	1.0	LS	42,496.13			\$ 42,496	\$ -	\$ -	\$ 42,496
	Engineering									
9.6	Design Engineering	1.00	LS		33,940.40		\$ -	\$ 33,940	\$ -	\$ 33,940
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		2,969.79		\$ -	\$ 2,970	\$ -	\$ 2,970
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		15,909.56		\$ -	\$ 15,910	\$ -	\$ 15,910
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		4,242.55		\$ -	\$ 4,243	\$ -	\$ 4,243
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,272.77		\$ -	\$ 1,273	\$ -	\$ 1,273
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 120,000	\$ -	\$ -	\$ 120,000	\$ 120,000
9.20	Sales Tax on Materials	8.80%	LS	2,098,003.10			\$ 184,624	\$ -	\$ -	\$ 184,624
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,249.61		\$ -	\$ 4,250	\$ -	\$ 4,250
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 227,120	\$ 331,384	\$ 127,224	\$ 685,728

Propel NY - TO53 AS7

16 -Existing Holbrook 138 Kv Upgrade

Total: \$ 1,907,161

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
16 -Existing Holbrook 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220
SUBTOTAL (Costs):	\$ 830,227	\$ 415,860	\$ 100,777	\$ 1,346,865
CONTRACTOR MARK-UP (OH&P)	\$ 149,441	\$ 74,855	\$ 18,140	\$ 242,436
SUBTOTAL:	\$ 979,668	\$ 490,715	\$ 118,917	\$ 1,589,301
CONTINGENCY ON ENTIRE PROJECT	\$ 195,934	\$ 98,143	\$ 23,783	\$ 317,860
TOTAL:	\$ 1,175,602	\$ 588,858	\$ 142,701	\$ 1,907,161

Description of Work:The Applicants propose Upgrades to the Holbrook Substation, which is an existing LIPA 138 kV AIS substation, configured as an eight (8) position ring bus. The Holbrook Substation is located in the Hamlet of Holbrook in the Town of Brookhaven in Suffolk County.The 138 kV, 138-882 Line currently feeds two (2) 138 kV/69 kV transformers via an AIS disconnect before connecting into its bus section within the ring bus. The Solution involves replacing the existing switch #1322 with a new hybrid PASS GIS 138 kV breaker system with integrated disconnect and ground switches.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
16 -Existing Holbrook 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	3,000.00	2,000.00	\$ -	\$ 3,000	\$ 2,000	\$ 5,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 3,000	\$ 2,000	\$ 5,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 510,000	\$ 13,559	\$ 5,811	\$ 529,370

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,900	LF	5.30	1.43	0.29	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 213,281	\$ 170,625	\$ 42,656	\$ 426,562
16 -Existing Holbrook 138 Kv_ Upgrade							\$ 753,760	\$ 202,826	\$ 57,059	\$ 1,013,645
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,095.98	3,898.28	\$ -	\$ 9,096	\$ 3,898	\$ 12,994
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		40,545.79		\$ -	\$ 40,546	\$ -	\$ 40,546
9.4	Utility PM and Project Oversight	1.0	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.5	Site Accommodation, Facilities, Storage	1.0	LS	10,136.45			\$ 10,136	\$ -	\$ -	\$ 10,136
	Engineering									
9.6	Design Engineering	1.00	LS		81,091.59		\$ -	\$ 81,092	\$ -	\$ 81,092
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		7,095.51		\$ -	\$ 7,096	\$ -	\$ 7,096
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		38,011.68		\$ -	\$ 38,012	\$ -	\$ 38,012
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,136.45		\$ -	\$ 10,136	\$ -	\$ 10,136
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		3,040.93		\$ -	\$ 3,041	\$ -	\$ 3,041
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.19	Bonds	1	LS		-	\$ 38,000	\$ -	\$ -	\$ 38,000	\$ 38,000
9.20	Sales Tax on Materials	8.80%	LS	753,759.78			\$ 66,331	\$ -	\$ -	\$ 66,331
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,013.64		\$ -	\$ 1,014	\$ -	\$ 1,014
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 76,467	\$ 213,034	\$ 43,718	\$ 333,220

Propel NY - TO53 AS7

17 -Existing Barrett 138 Kv_ Upgrade

Total: \$ -

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
17 -Existing Barrett 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ -	\$ -	\$ -	\$ -
CONTRACTOR MARK-UP (OH&P)	\$ -	\$ -	\$ -	\$ -
SUBTOTAL:	\$ -	\$ -	\$ -	\$ -
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ -
TOTAL:	\$ -	\$ -	\$ -	\$ -

Description of Work: Upgrades to the existing LIPA Barrett Substation, located in the Hamlet of Oceanside, Town of Hempstead, Nassau County. Barrett Substation is an existing 138 kV AIS substation with a main-tie-main configuration.The Solution includes the addition of a new breaker in series with the existing 138 kV CB-1330 currently feeding a 138 kV/69 kV transformer bank										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
17 -Existing Barrett 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00				\$ -
1.2	Demolition	1	LS	-	15,000.00	10,000.00				\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80				\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50				\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00				\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00				\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60				\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60				\$ -
1.9	Blasting		EA							\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00				\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00				\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92				\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00				\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00				\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-				\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00				\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72				\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25				\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50				\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70				\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00				\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78				\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78				\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78				\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78				\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78				\$ -
2.6	345kV, GIS air terminal-3 Ph	-	CY	703.89	804.44	502.78				\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78				\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78				\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78				\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78				\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78				\$ -
2.12	345kV, Cable sealing end - 3 Ph	-	CY	703.89	804.44	502.78				\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78				\$ -
2.14	345kV, Disconnect Switch - 3Ph	-	CY	703.89	804.44	502.78				\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78				\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78				\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78				\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78				\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78				\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78				\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78				\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78				\$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78				\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78				\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78				\$ -
2.26	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78				\$ -
2.27	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78				\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78				\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78				\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78				\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78				\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78				\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78				\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00				\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00				\$ -
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78				\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA							\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00				\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00				\$ -
3.6	345kV, GIS air terminal-3 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.12	345kV, Cable sealing end - 3 Ph	0	EA	8,346.00	5,758.74	3,839.16				\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00				\$ -
3.14	345kV, Disconnect Switch - 3Ph	0	EA	19,240.00	11,544.00	7,696.00				\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84				\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89				\$ -
3.17	138kV, Disconnect Switch-3 Ph	0	EA	5,694.00	3,928.86	2,619.24				\$ -
3.18	138kV, Cable sealing end-3 Ph	0	EA	4,810.00	2,886.00	1,924.00				\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67				\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67				\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00				\$ -
3.22	138kV, H Frame	0	EA	-	-	-				\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00				\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29				\$ -
3.26	AL. Bus fittings	0	LS	-	-	-				\$ -
3.27	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50				\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	0	EA							
4.2	345kV, GIS fast acting GND SW	0	EA							
4.3	345kV, GIS to air bushing	0	EA							
4.4	345kV, GIS Cable sealing end	0	EA							\$ -
4.5	345kV, Cable sealing end - 3 Ph	0	EA		5,460.00	2,340.00				\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28				\$ -
4.7	345kV, Disconnect Switch - 3Ph	0	EA		7,234.50	3,100.50				\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00				\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00				\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00				\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00				\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00				\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA							\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00				\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA							\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA							\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00				\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00				\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00				\$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA		13,559.00	5,811.00				\$ -
4.21	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50				\$ -
4.22	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00				\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75				\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA							\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00				\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00				\$ -
4.27	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil		LF							\$ -
4.28	Equip jumper connector compression Single 1272 kcmil		EA							\$ -
4.29	Substation Equipment connections-Bare Wire ACSR- Lapwing 45/7-1590kcmil		LF							\$ -
4.30	Equip jumper connector compression double 1590 kcmil		EA							\$ -
4.31	Wire Spacer-double		EA							\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	300V Copper 12/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.2	300V Copper 12/c TC XHHW/CPE 10AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.3	300V Copper 4/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.4	300V Copper 4/c TC XHHW/CPE 10AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.5	300V Copper 7/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.6	600V Copper 4/c TC XHHW/CPE 8AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.7	Fiber		LF	0.65	-	-	\$ -	\$ -	\$ -	\$ -
5.8							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62				\$ -
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62				\$ -
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.10	Primary Line Relays (Pilot): SEL-411L	5	EA	41,575.50	33,260.40	8,315.10				\$ -
8.11	Backup Line Relays (Pilot): GE L90	5	EA	41,575.50	33,260.40	8,315.10				\$ -
8.12	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62				\$ -
8.13	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62				\$ -
8.14	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62				\$ -
8.15	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62				\$ -
8.16	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62				\$ -
8.17	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62				\$ -
8.18	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.19	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.20	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.21	125VDC Battery System	0	LS	5,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.22	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.24	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
17 -Existing Barrett 138 Kv_ Upgrade							\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		-	-	\$ -	\$ -	\$ -	\$ -
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		-		\$ -	\$ -	\$ -	\$ -
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		-		\$ -	\$ -	\$ -	\$ -
9.4	Utility PM and Project Oversight	1.0	LS		-		\$ -	\$ -	\$ -	\$ -
9.5	Site Accommodation, Facilities, Storage	1.0	LS	-			\$ -	\$ -	\$ -	\$ -
	Engineering									
9.6	Design Engineering	1.00	LS		-					\$ -
9.7	LiDAR /GPR	1.00	LS		-					\$ -
9.8	Geotech	4.00	EA		-					\$ -
9.9	Surveying/Staking	1.00	Site		-					\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		-					\$ -
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-					\$ -
9.12	Environmental Licensing & Permitting Costs	-	LS		-					\$ -
9.13	Environmental Mitigation	-	LS		-					\$ -
9.14	Warranties / LOC's	1.00	LS		-					\$ -
9.15	Real Estate Costs (New)	1.00	LS		-					\$ -
9.16	Real Estate Costs (Incumbent Utility)	1.00	LS		-					\$ -
9.17	Legal Fees	-	LS		-					\$ -
9.18	Insurance	1.00	LS		-					\$ -
9.19	Bonds	1	LS		-	\$ 60,000				\$ -
9.20	Sales Tax on Materials	8.80%	LS	-						\$ -
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		-					\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ -	\$ -	\$ -	\$ -

Propel NY - TO53 AS7

18 - Existing EGC 138 kV Upgrade

Total: \$ 17,743,027

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
18 - Existing EGC 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS	\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670
3. SUBSTATION STRUCTURES	\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843
4. MAJOR EQUIPMENT	\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458
7. GROUND GRID	\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944
SUBTOTAL (Costs):	\$ 4,951,528	\$ 5,301,753	\$ 2,277,106	\$ 12,530,386
CONTRACTOR MARK-UP (OH&P)	\$ 891,275	\$ 954,316	\$ 409,879	\$ 2,255,470
SUBTOTAL:	\$ 5,842,803	\$ 6,256,069	\$ 2,686,985	\$ 14,785,856
CONTINGENCY ON ENTIRE PROJECT	\$ 1,168,561	\$ 1,251,214	\$ 537,397	\$ 2,957,171
TOTAL:	\$ 7,011,363	\$ 7,507,282	\$ 3,224,381	\$ 17,743,027

Description of Work: Upgrades to the existing LIPA East Garden City Substation, Hamlet of Uniondale, Town of Hempstead, Nassau County. The LIPA East Garden City Substation is an existing 138 kV AIS substation with a ten (10) position ring bus configuration.The Solution includes the installation of three (3) air core reactors with by-pass circuit, in series, to the 138 kV lines 138-462,138-465, and 138-463, respectively. Due to current site constraints, the new series reactors will be installed in the property adjacent to the existing station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
18 - Existing EGC 138 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000
1.3	New Access Road - 20'	2,051	SY	4.85	7.20	4.80	\$ 9,945	\$ 14,764	\$ 9,843	\$ 34,552
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	6,423	CY		9.00	6.00	\$ -	\$ 57,811	\$ 38,540	\$ 96,351
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	867	CY		21.00	9.00	\$ -	\$ 18,210	\$ 7,804	\$ 26,015
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,804	CY		2.40	1.60	\$ -	\$ 18,731	\$ 12,487	\$ 31,218
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	867	CY	25.00	2.40	1.60	\$ 21,679	\$ 2,081	\$ 1,387	\$ 25,148
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,217	LF	13.85	13.85	6.92	\$ 16,853	\$ 16,853	\$ 8,427	\$ 42,133
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	75,203.20	57,600.00	27,180.00	\$ 75,203	\$ 57,600	\$ 27,180	\$ 159,983
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	1,826	LF	2.41	3.16	0.72	\$ 4,399	\$ 5,769	\$ 1,314	\$ 11,482
1.18	Temporary fencing	1,217	LF	7.50	5.25	2.25	\$ 9,128	\$ 6,389	\$ 2,738	\$ 18,255
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Retaining Wall	408	LF	156.00	117.00	117.00	\$ 63,648	\$ 47,736	\$ 47,736	\$ 159,120
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	\$ 12,536	\$ 14,327	\$ 8,954	\$ 35,818
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.29	138kV, Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	249	CY	703.89	804.44	502.78	\$ 175,204	\$ 200,233	\$ 125,146	\$ 500,583
2.30	138kV, Surge arrester	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	\$ 23,400	\$ 14,040	\$ 9,360	\$ 46,800
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.5	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.5	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.6	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.3	138kV, Disconnect Switch	3	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.3	138kV, Cable sealing end	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.4	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.5	138kV, Surge arrester	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.6	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.3	138kV, H Frame	6	EA	21,450.00	12,870.00	17,160.00	\$ 128,700	\$ 77,220	\$ 102,960	\$ 308,880
3.3	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.4	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500
3.5	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	27	EA	4,446.00	1,050.00	450.00	\$ 120,042	\$ 28,350	\$ 12,150	\$ 160,542
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	9	EA	46,833.00	6,500.00	2,500.00	\$ 421,497	\$ 58,500	\$ 22,500	\$ 502,497
4.26	138kV, Surge arrester	18	EA	4,446.00	4,200.00	1,800.00	\$ 80,028	\$ 75,600	\$ 32,400	\$ 188,028
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	850	LF	266.50	53.04	13.26	\$ 226,525	\$ 45,084	\$ 11,271	\$ 282,880
6.7	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	\$ 299,700	\$ 395,900	\$ 210,900	\$ 906,500
6.8	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	\$ 1,731,600	\$ 1,043,400	\$ 688,200	\$ 3,463,200
6.9	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.10	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	\$ 27,369	\$ 12,323	\$ 8,215	\$ 47,908
6.11	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	\$ 48,244	\$ 27,850	\$ 18,567	\$ 94,661
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458
7. GROUND GRID										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	9,350	LF	2.09	3.42	1.46	\$ 19,551	\$ 31,933	\$ 13,686	\$ 65,170
7.2	Caweld, DSA, 4/0 , T, CROSS	252	EA	165.00	75.00		\$ 41,580	\$ 18,900	\$ -	\$ 60,480
7.3	Ground Rod, 3/4" x 15'	221	EA	135.00	67.50	7.50	\$ 29,835	\$ 14,918	\$ 1,658	\$ 46,410
TOTAL - GROUND GRID							\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451		EA				\$ -	\$ -	\$ -	\$ -
8.3	Backup Bay Control: SEL-451		EA				\$ -	\$ -	\$ -	\$ -
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA				\$ -	\$ -	\$ -	\$ -
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA				\$ -	\$ -	\$ -	\$ -
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -
18 - Existing EGC 138 kV_ Upgrade							\$ 4,463,312	\$ 3,223,882	\$ 1,857,249	\$ 9,544,442
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		177,839.56	76,216.96	\$ -	\$ 177,840	\$ 76,217	\$ 254,057
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		381,777.69		\$ -	\$ 381,778	\$ -	\$ 381,778
9.4	Utility PM and Project Oversight	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.5	Site Accommodation, Facilities, Storage	1.0	LS	95,444.42			\$ 95,444	\$ -	\$ -	\$ 95,444
	Engineering									
9.6	Design Engineering	1.00	LS		763,555.37		\$ -	\$ 763,555	\$ -	\$ 763,555
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	2.00	EA		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
9.9	Surveying/Staking	1.00	Site		66,811.10		\$ -	\$ 66,811	\$ -	\$ 66,811
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		357,916.58		\$ -	\$ 357,917	\$ -	\$ 357,917
	Permitting and Additional Costs									
9.11	Physical Security		LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		28,633.33		\$ -	\$ 28,633	\$ -	\$ 28,633
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 340,000	\$ -	\$ -	\$ 340,000	\$ 340,000
9.20	Sales Tax on Materials	8.80%	LS	4,463,311.81			\$ 392,771	\$ -	\$ -	\$ 392,771
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,544.44		\$ -	\$ 9,544	\$ -	\$ 9,544
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944

Propel NY - TO53 AS7

19 -Existing Lake Success 138 kV Upgrade

Total: \$ 24,220,111

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
19 -Existing Lake Success 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 390,817	\$ 238,191	\$ 158,469	\$ 787,477
3. SUBSTATION STRUCTURES	\$ 200,032	\$ 217,657	\$ 129,933	\$ 547,623
4. MAJOR EQUIPMENT	\$ 10,717,905	\$ 378,796	\$ 244,570	\$ 11,341,270
5. LOW VOLTAGE & CONTROL CABLE	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,129,913	\$ 2,613,233	\$ 503,999	\$ 4,247,145
SUBTOTAL (Costs):	\$ 12,508,756	\$ 3,525,258	\$ 1,070,584	\$ 17,104,598
CONTRACTOR MARK-UP (OH&P)	\$ 2,251,576	\$ 634,546	\$ 192,705	\$ 3,078,828
SUBTOTAL:	\$ 14,760,333	\$ 4,159,805	\$ 1,263,289	\$ 20,183,426
CONTINGENCY ON ENTIRE PROJECT	\$ 2,952,067	\$ 831,961	\$ 252,658	\$ 4,036,685
TOTAL:	\$ 17,712,399	\$ 4,991,765	\$ 1,515,947	\$ 24,220,111

Description of Work:Upgrades to the existing LIPA Lake Success Substation, located in the Hamlet of North New Hyde Park, Town of North Hempstead, Nassau County. Lake Success Substation is an existing 138 kV AIS substation with a main-tie-main configuration.The Solution includes replacing removal of the existing Jamaica 903 Line 138 kV PAR and installation of a new, higher capacity PAR and installing a oil-filled shunt reactor

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
19 -Existing Lake Success 138 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	\$ 15,063	\$ 17,215	\$ 10,759	\$ 43,038
2.25	138kV, Bus support-1 Ph, low	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	\$ 216,000	\$ 38,400	\$ 33,600	\$ 288,000
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 390,817	\$ 238,191	\$ 158,469	\$ 787,477
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	\$ 8,346	\$ 5,760	\$ 3,840	\$ 17,945
3.16	138kV, Bus support-1 Ph, low	12	EA	2,782.00	1,919.84	1,279.89	\$ 33,384	\$ 23,038	\$ 15,359	\$ 71,781
3.17	138kV, Disconnect Switch	1	EA	5,694.00	3,928.86	2,619.24	\$ 5,694	\$ 3,929	\$ 2,619	\$ 12,242
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	625	LF	25.00	184.94	123.29	\$ 15,625	\$ 115,586	\$ 77,058	\$ 208,269
3.26	AL. Bus fittings	1	LS	18,750.00	18,750.00	9,375.00	\$ 18,750	\$ 18,750	\$ 9,375	\$ 46,875
3.27	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 200,032	\$ 217,657	\$ 129,933	\$ 547,623
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	1	EA	10,680,205.00	3,520.00	880.00	\$ 10,680,205	\$ 3,520	\$ 880	\$ 10,684,605
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00		\$ 5,811.00	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	1	EA	37,700.00	11,875.50	5,089.50	\$ 37,700	\$ 11,876	\$ 5,090	\$ 54,665
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,717,905	\$ 378,796	\$ 244,570	\$ 11,341,270
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,600	LF	5.30	1.43	0.29	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	750	LF	11.15	10.80	5.40	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (87L): GE L90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.8	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.9	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
19 -Existing Lake Success 138 kV_ Upgrade							\$ 11,378,844	\$ 912,025	\$ 566,585	\$ 12,857,454
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		51,751.35	22,179.15	\$ -	\$ 51,751	\$ 22,179	\$ 73,930
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		514,298.15		\$ -	\$ 514,298	\$ -	\$ 514,298

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.4	Utility PM and Project Oversight	1.0	LS		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.5	Site Accommodation, Facilities, Storage	1.0	LS	128,574.54			\$ 128,575	\$ -	\$ -	\$ 128,575
	Engineering									
9.6	Design Engineering	1.00	LS		1,028,596.29		\$ -	\$ 1,028,596	\$ -	\$ 1,028,596
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		90,002.18		\$ -	\$ 90,002	\$ -	\$ 90,002
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		482,154.51		\$ -	\$ 482,155	\$ -	\$ 482,155
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		\$ -	\$ 6,547	\$ -	\$ 6,547
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		38,572.36		\$ -	\$ 38,572	\$ -	\$ 38,572
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 480,000	\$ -	\$ -	\$ 480,000	\$ 480,000
9.20	Sales Tax on Materials	8.80%	LS	11,378,843.67			\$ 1,001,338	\$ -	\$ -	\$ 1,001,338
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,857.45		\$ -	\$ 12,857	\$ -	\$ 12,857
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,129,913	\$ 2,613,233	\$ 503,999	\$ 4,247,145

Propel NY - TO53 AS7

20 - Existing Rainey 345 kV Upgrade

Total: \$ 5,182,771

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
20 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS	\$ 136,155	\$ 51,378	\$ 36,911	\$ 224,444
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 224,344	\$ 568,027	\$ 111,620	\$ 903,991
SUBTOTAL (Costs):	\$ 2,460,513	\$ 916,266	\$ 283,370	\$ 3,660,149
CONTRACTOR MARK-UP (OH&P)	\$ 442,892	\$ 164,928	\$ 51,007	\$ 658,827
SUBTOTAL:	\$ 2,903,405	\$ 1,081,194	\$ 334,377	\$ 4,318,976
CONTINGENCY ON ENTIRE PROJECT	\$ 580,681	\$ 216,239	\$ 66,875	\$ 863,795
TOTAL:	\$ 3,484,086	\$ 1,297,433	\$ 401,252	\$ 5,182,771

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of a new breaker in series with the existing 345 kV CB -1E, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
20 - Existing Rainey 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	1	LS	-	90,000.00	60,000.00	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	40,089.60	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.32	Precast Concrete Piles-12"X80'	6	EA	18,000.00	3,200.00	2,800.00	\$ 108,000	\$ 19,200	\$ 16,800	\$ 144,000
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 136,155	\$ 51,378	\$ 36,911	\$ 224,444
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.21	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	2	EA	980,000.00	57,239.00	24,531.00	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	7,800	LF	5.30	1.43	0.29	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench		LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 13,380	\$ 12,960	\$ 6,480	\$ 32,820
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
20 - Existing Rainey 345 kV_ Upgrade							\$ 2,236,168	\$ 348,239	\$ 171,750	\$ 2,756,158
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		18,199.62	7,799.84	\$ -	\$ 18,200	\$ 7,800	\$ 25,999
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		110,246.30		\$ -	\$ 110,246	\$ -	\$ 110,246
9.4	Utility PM and Project Oversight	1.0	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.5	Site Accommodation, Facilities, Storage	1.0	LS	27,561.58			\$ 27,562	\$ -	\$ -	\$ 27,562
	Engineering									
9.6	Design Engineering	1.00	LS		220,492.61		\$ -	\$ 220,493	\$ -	\$ 220,493
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	1.00	EA		2,730.00	1,820.00	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
9.9	Surveying/Staking	1.00	Site		19,293.10		\$ -	\$ 19,293	\$ -	\$ 19,293
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		103,355.91		\$ -	\$ 103,356	\$ -	\$ 103,356
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
0	Warranties / LOC's	1.00	LS		8,268.47		\$ -	\$ 8,268	\$ -	\$ 8,268
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 102,000	\$ -	\$ -	\$ 102,000	\$ 102,000
9.20	Sales Tax on Materials	8.80%	LS	2,236,168.36			\$ 196,783	\$ -	\$ -	\$ 196,783
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,756.16		\$ -	\$ 2,756	\$ -	\$ 2,756
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 224,344	\$ 568,027	\$ 111,620	\$ 903,991

Propel NY - TO53 AS7

21 -Other Substation Upgrades

Total: \$ 647,945

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
21 -Other Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 18,427	\$ 82,412	\$ 15,499	\$ 116,339
SUBTOTAL (Costs):	\$ 189,052	\$ 218,912	\$ 49,624	\$ 457,589
CONTRACTOR MARK-UP (OH&P)	\$ 34,029	\$ 39,404	\$ 8,932	\$ 82,366
SUBTOTAL:	\$ 223,082	\$ 258,316	\$ 58,557	\$ 539,954
CONTINGENCY ON ENTIRE PROJECT	\$ 44,616	\$ 51,663	\$ 11,711	\$ 107,991
TOTAL:	\$ 267,698	\$ 309,979	\$ 70,268	\$ 647,945

Description of Work: Control protection replay panel upgrades at Valley Stream and Oakwood 138kV stations

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
21 -Other Substation Upgrades										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ -	\$ -	\$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	\$ -	\$ -	\$ -	\$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	\$ -	\$ -	\$ -	\$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	\$ -	\$ -	\$ -	\$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	\$ -	\$ -	\$ -	\$ -
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	\$ -	\$ -	\$ -	\$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	\$ -	\$ -	\$ -	\$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	\$ -	\$ -	\$ -	\$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	\$ -	\$ -	\$ -	\$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	\$ -	\$ -	\$ -	\$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	\$ -	\$ -	\$ -	\$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	\$ -	\$ -	\$ -	\$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	\$ -	\$ -	\$ -	\$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.35	Precast Concrete Piles-12"X80'	-	EA							
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings		LS	14,310.00	14,310.00	7,155.00	\$ -	\$ -	\$ -	\$ -
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	0	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	\$ -	\$ -	\$ -	\$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				\$ -	\$ -	\$ -	\$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				\$ -	\$ -	\$ -	\$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	4,446.00	1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA	4,446.00	4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	0	LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -
6.2	Conduit, PVC, 4", SCH 40	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	\$ -	\$ -	\$ -	\$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	\$ -	\$ -	\$ -	\$ -
6.8	138kV UG	0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Line Relays (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.5	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	\$ 21,328	\$ 17,062	\$ 4,266	\$ 42,656
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
21 -Other Substation Upgrades							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		5,971.87	2,559.37	\$ -	\$ 5,972	\$ 2,559	\$ 8,531
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,412.50		\$ -	\$ 3,412	\$ -	\$ 3,412
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		13,649.99		\$ -	\$ 13,650	\$ -	\$ 13,650
9.4	Utility PM and Project Oversight	1.0	LS		3,412.50		\$ -	\$ 3,412	\$ -	\$ 3,412
9.5	Site Accommodation, Facilities, Storage	1.0	LS	3,412.50			\$ 3,412	\$ -	\$ -	\$ 3,412
	Engineering									
9.6	Design Engineering	1.00	LS		54,599.97		\$ -	\$ 54,600	\$ -	\$ 54,600
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		2,388.75		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	-	LS		12,796.87		\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		3,412.50		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,023.75		\$ -	\$ 1,024	\$ -	\$ 1,024
9.15	Laydown Lease		LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)		LS		-		\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 12,940	\$ -	\$ -	\$ 12,940	\$ 12,940
9.20	Sales Tax on Materials	8.80%	LS	170,624.92			\$ 15,015	\$ -	\$ -	\$ 15,015
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		341.25		\$ -	\$ 341	\$ -	\$ 341
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 18,427	\$ 82,412	\$ 15,499	\$ 116,339

Propel NY - TO53 AS7

AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit

Total: \$ 563,380,100

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 6,350,848	\$ 31,142,829	\$ 12,500,819	\$ 49,994,496
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 43,763,287	\$ 49,728,024	\$ 36,901,086	\$ 130,392,396
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 68,716,802	\$ 41,446,477	\$ 26,899,532	\$ 137,062,812
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 13,726,684	\$ 50,000,555	\$ 16,690,360	\$ 80,417,599
SUBTOTAL (Costs):	\$ 132,557,621	\$ 172,317,884	\$ 92,991,797	\$ 397,867,302
CONTRACTOR MARK-UP (OH&P)	\$ 23,860,372	\$ 31,017,219	\$ 16,738,523	\$ 71,616,114
SUBTOTAL:	\$ 156,417,993	\$ 203,335,104	\$ 109,730,321	\$ 469,483,417
CONTINGENCY ON ENTIRE PROJECT	\$ 31,283,599	\$ 40,667,021	\$ 21,946,064	\$ 93,896,683
TOTAL:	\$ 187,701,591	\$ 244,002,124	\$ 131,676,385	\$ 563,380,100

Description of Work: 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County. The proposed route will be approximately 25.7 miles, utilizing 4000kcmil XLPE cable for the onshore portions of the route and 5000kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique. Please see the Design Basis Manual, Attachment B.1.1, for more details. Three counties, one city, one town, and three villages will be traversed between the two substations. The proposed route starts in the Hamlet of Oceanside in the Town of Hempstead in Nassau County traveling north through the Villages of Rockville Centre and Lynbrook. The proposed route travels through into the Village of Valley Stream before entering the Borough of Queens, City of New York, Queens County. The proposed route passes a vacant property in the area of 180th Street and Brinkerhoff Avenue, which may allow for future expansion, such as the 6,000MW expansion. In this Solution the Y-51 circuit will be interconnected into the new Eastern Queens Substation. The proposed route will exit Queens County into the Borough of the Bronx, City of New York, Bronx County as it crosses the East River. Once in Bronx County, the proposed route will travel north and west to terminate at Tremont Substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	25.72	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 18,004,000	\$ 7,716,000	\$ 25,720,000
1.3	Flaggers	780	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,248,000	\$ 3,744,000	\$ 1,248,000	\$ 6,240,000
1.4	K Rail / Lane Control / Metal Plates	135,802	LF	\$ 30	\$ 18	\$ 12	\$ 4,074,048	\$ 2,444,429	\$ 1,629,619	\$ 8,148,096
1.5	Police Support	31,200.0	HR		\$ 120	\$ 27	\$ -	\$ 3,744,000	\$ 842,400	\$ 4,586,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	25.72	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 1,028,800	\$ 3,086,400	\$ 1,028,800	\$ 5,144,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 6,350,848	\$ 31,142,829	\$ 12,500,819	\$ 49,994,496
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	25.72	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 3,595,656	\$ 2,397,104	\$ 5,992,760
2.2	Formwork in Trench	981,845	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,963,690	\$ 1,472,767	\$ 490,922	\$ 3,927,379
2.3	Trench Excavation	84,730	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,482,767	\$ 635,472	\$ 2,118,239
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	5,296	SF	\$ 50	\$ 25	\$ 14	\$ 264,780	\$ 129,742	\$ 74,138	\$ 468,660
2.5	Supply & Install Thermal Backfill	46,774	CY	\$ 350	\$ 245	\$ 105	\$ 16,370,898	\$ 11,459,629	\$ 4,911,270	\$ 32,741,797
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	18,901	CY	\$ 200	\$ 125	\$ 50	\$ 3,780,102	\$ 2,362,564	\$ 945,026	\$ 7,087,692
2.9	Conduit 8" HDPE	407,405	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 8,368,095	\$ 2,309,985	\$ 989,994	\$ 11,668,073
2.10	Conduit 4" HDPE	135,802	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 729,255	\$ 570,367	\$ 244,443	\$ 1,544,064
2.11	Conduit 2" HDPE	135,802	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 259,381	\$ 427,775	\$ 183,332	\$ 870,488
2.12	Warning Tape	135,802	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 20,370	\$ 33,950	\$ 13,580	\$ 67,901
2.13	Trench Box Shoring (Vault)	76	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,374,011	\$ 2,061,017	\$ 3,435,028
2.14	Splice Vault Excavation	24,700	CY		\$ 17.5	\$ 7.5	\$ -	\$ 432,250	\$ 185,250	\$ 617,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.15	Splice Vault Supply & Installation	76	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,660,000	\$ 1,254,000	\$ 2,926,000	\$ 6,840,000
2.16	Splice Vault Backfill	7,410	CY		\$ 14.0	\$ 6.0	\$ -	\$ 103,740	\$ 44,460	\$ 148,200
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	10,411	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 8,328,800	\$ 16,657,600	\$ 16,657,600	\$ 41,644,000
2.19	Air Test Ducts	679,008	LF			\$ 0.25	\$ -	\$ -	\$ 169,752	\$ 169,752
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	50,350	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 704,905	\$ 704,905	\$ 352,452	\$ 1,762,261
2.21	PVMT, AGGREGATE, 10", BASE COURSE	13,986	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 313,011	\$ 328,662	\$ 140,855	\$ 782,528
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	189	EA		\$ 400	\$ 1,200	\$ -	\$ 75,602	\$ 226,806	\$ 302,408
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	189	EA		\$ 10	\$ 15	\$ -	\$ 1,890	\$ 2,835	\$ 4,725
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	468	EA		\$ 400	\$ 1,200	\$ -	\$ 187,096	\$ 561,288	\$ 748,384
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,404,312	\$ 936,208	\$ -	\$ 1,404,312	\$ 936,208	\$ 2,340,520
2.26	Excess Materials Disposal to Certified Backfill	132,625	CY		\$ 24.5	\$ 10.5	\$ -	\$ 3,249,323	\$ 1,392,567	\$ 4,641,890
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	76	EA			\$ 4,000	\$ -	\$ -	\$ 304,000	\$ 304,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	109,430	CF		\$ 1.0	\$ 0.5	\$ -	\$ 109,430	\$ 54,715	\$ 164,144
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 43,763,287	\$ 49,728,024	\$ 36,901,086	\$ 130,392,396
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	427,775	FT	\$ 154	\$ 92	\$ 62	\$ 65,877,356	\$ 39,526,414	\$ 26,350,942	\$ 131,754,712
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	228	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,672,616	\$ 1,870,831	\$ 534,523	\$ 5,077,970
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	76	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,014,034	\$ 1,409,824	\$ 604,210	\$ 4,028,068
3.11	Fiber Optic Cable	142,592	FT	\$ 7	\$ 3	\$ 2	\$ 1,054,751	\$ 474,916	\$ 316,611	\$ 1,846,277
3.12	Ground Continuity Conductor	142,592	FT	\$ 13	\$ 8	\$ 5	\$ 1,859,253	\$ 1,073,288	\$ 715,525	\$ 3,648,066
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 68,716,802	\$ 41,446,477	\$ 26,899,532	\$ 137,062,812
AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit							\$ 118,830,937	\$ 122,317,330	\$ 76,301,437	\$ 317,449,703
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,958,563	\$ 3,972,375	\$ -	\$ 5,958,563	\$ 3,972,375	\$ 9,930,938
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,174,497.03		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.3	Construction Project Management / Supervision	1	LS		12,697,988.14		\$ -	\$ 12,697,988	\$ -	\$ 12,697,988
4.4	Utility PM and Project Oversight	1	LS		3,174,497.03		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.5	Site Accommodation, Facilities, Storage	1	LS	3,174,497.03			\$ 3,174,497	\$ -	\$ -	\$ 3,174,497
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 15,872,485	\$ -	\$ -	\$ 15,872,485	\$ -	\$ 15,872,485
4.7	LiDAR /GPR	1.0	LS		\$ 571,409	\$ 380,940	\$ -	\$ 571,409	\$ 380,940	\$ 952,349
4.8	Geotech	26.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 70,980	\$ 47,320	\$ 118,300
4.9	Surveying/Staking	1	LS		\$ 1,333,289		\$ -	\$ 1,333,289	\$ -	\$ 1,333,289
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,174,497		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.12	Environmental-special studies/investigation	-	LS		\$ 175,000		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 952,349		\$ -	\$ 952,349	\$ -	\$ 952,349
4.14	Laydown Lease & temporary easement	1	LS		\$ 3,000,000		\$ -	\$ 3,000,000	\$ -	\$ 3,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 687,646	\$ -	\$ -	\$ 687,646	\$ 687,646
4.16	Legal Fees (Real estate)	1.00	LS		-	20,629.38	\$ -	\$ -	\$ 20,629	\$ 20,629
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	4	Crossing			\$ 1,000	\$ -	\$ -	\$ 4,000	\$ 4,000
4.19	Bonds	1	LS			\$ 11,260,000	\$ -	\$ -	\$ 11,260,000	\$ 11,260,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 118,830,936.67			\$ 10,552,187	\$ -	\$ -	\$ 10,552,187
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 317,450	\$ -	\$ -	\$ 317,450	\$ 317,450
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,726,684	\$ 50,000,555	\$ 16,690,360	\$ 80,417,599

Propel NY - TO53 AS7

AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit

Total: \$ 202,306,242

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579
SUBTOTAL (Costs):	\$ 48,389,256	\$ 63,543,409	\$ 30,938,976	\$ 142,871,640
CONTRACTOR MARK-UP (OH&P)	\$ 8,710,066	\$ 11,437,814	\$ 5,569,016	\$ 25,716,895
SUBTOTAL:	\$ 57,099,322	\$ 74,981,222	\$ 36,507,991	\$ 168,588,535
CONTINGENCY ON ENTIRE PROJECT	\$ 11,419,864	\$ 14,996,244	\$ 7,301,598	\$ 33,717,707
TOTAL:	\$ 68,519,186	\$ 89,977,467	\$ 43,809,589	\$ 202,306,242

Description of Work: upgrade the existing underground line ratings of the Oakwood to Syosset and Greenlawn to Syosset circuits to match that of the overhead transmission line ratings of Syosset Transition station to Syosset Substation as an Upgrade to the existing LIPA System

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,875,000	\$ 3,375,000	\$ 11,250,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	59,400	LF	\$ 30	\$ 18	\$ 12	\$ 1,782,000	\$ 1,069,200	\$ 712,800	\$ 3,564,000
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	11.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 450,000	\$ 1,350,000	\$ 450,000	\$ 2,250,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,572,750	\$ 1,048,500	\$ 2,621,250
2.2	Formwork in Trench	467,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 934,512	\$ 700,884	\$ 233,628	\$ 1,869,024
2.3	Trench Excavation	35,996	CY		\$ 17.5	\$ 7.5	\$ -	\$ 629,930	\$ 269,970	\$ 899,900
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,250	SF	\$ 50	\$ 25	\$ 14	\$ 112,488	\$ 55,119	\$ 31,497	\$ 199,103
2.5	Supply & Install Thermal Backfill	20,897	CY	\$ 350	\$ 245	\$ 105	\$ 7,313,854	\$ 5,119,698	\$ 2,194,156	\$ 14,627,709
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	8,222	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,644,482	\$ 1,027,801	\$ 411,120	\$ 3,083,403
2.9	Conduit 6" HDPE	178,200	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,888,920	\$ 1,010,394	\$ 433,026	\$ 3,332,340
2.10	Conduit 4" HDPE	59,400	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 318,978	\$ 249,480	\$ 106,920	\$ 675,378
2.11	Conduit 2" HDPE	59,400	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 113,454	\$ 187,110	\$ 80,190	\$ 380,754
2.12	Warning Tape	59,400	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,910	\$ 14,850	\$ 5,940	\$ 29,700
2.13	Trench Box Shoring (Vault)	33	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 596,610	\$ 894,915	\$ 1,491,525
2.14	Splice Vault Excavation	5,990	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,827	\$ 44,926	\$ 149,753
2.15	Splice Vault Supply & Installation	33	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,155,000	\$ 544,500	\$ 1,270,500	\$ 2,970,000
2.16	Splice Vault Backfill	1,797	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,158	\$ 10,782	\$ 35,941
2.17	Jack and Bore along Route	168	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 134,400	\$ 268,800	\$ 268,800	\$ 672,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	297,000	LF			\$ 0.25	\$ -	\$ -	\$ 74,250	\$ 74,250
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 299,187	\$ 299,187	\$ 149,594	\$ 747,968

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,936	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 132,853	\$ 139,496	\$ 59,784	\$ 332,133
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	82	EA		\$ 400	\$ 1,200	\$ -	\$ 32,890	\$ 98,669	\$ 131,559
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	82	EA		\$ 10	\$ 15	\$ -	\$ 822	\$ 1,233	\$ 2,056
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	209	EA		\$ 400	\$ 1,200	\$ -	\$ 83,587	\$ 250,761	\$ 334,348
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 614,250	\$ 409,500	\$ -	\$ 614,250	\$ 409,500	\$ 1,023,750
2.26	Excess Materials Disposal to Certified Backfill	52,246	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,280,023	\$ 548,581	\$ 1,828,604
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	33	EA			\$ 4,000	\$ -	\$ -	\$ 132,000	\$ 132,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,986	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,986	\$ 20,993	\$ 62,979
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	187,110	FT	\$ 127	\$ 76	\$ 51	\$ 23,762,970	\$ 14,257,782	\$ 9,505,188	\$ 47,525,940
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	99	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 583,902	\$ 974,802	\$ 278,515	\$ 1,837,218
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	33	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 879,747	\$ 527,848	\$ 351,899	\$ 1,759,494
3.11	Fiber Optic Cable	62,370	FT	\$ 7	\$ 3	\$ 2	\$ 461,351	\$ 207,730	\$ 138,486	\$ 807,567
3.12	Ground Continuity Conductor	62,370	FT	\$ 13	\$ 8	\$ 5	\$ 813,242	\$ 469,459	\$ 312,973	\$ 1,595,674
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit							\$ 43,400,234	\$ 44,927,052	\$ 25,180,776	\$ 113,508,061
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,103,235	\$ 1,402,157	\$ -	\$ 2,103,235	\$ 1,402,157	\$ 3,505,391
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.3	Construction Project Management / Supervision	1	LS		4,540,322.45		\$ -	\$ 4,540,322	\$ -	\$ 4,540,322
4.4	Utility PM and Project Oversight	1	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.5	Site Accommodation, Facilities, Storage	1	LS	1,135,080.61			\$ 1,135,081	\$ -	\$ -	\$ 1,135,081
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,675,403	\$ -	\$ -	\$ 5,675,403	\$ -	\$ 5,675,403
4.7	LiDAR /GPR	1.0	LS		\$ 204,315	\$ 136,210	\$ -	\$ 204,315	\$ 136,210	\$ 340,524
4.8	Geotech	12.0	Location		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 794,556		\$ -	\$ 794,556	\$ -	\$ 794,556
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,135,081		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 340,524		\$ -	\$ 340,524	\$ -	\$ 340,524
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 43,190	\$ -	\$ -	\$ 43,190	\$ 43,190
4.16	Legal Fees (Real estate)	1.00	LS		-	1,295.70	\$ -	\$ -	\$ 1,296	\$ 1,296
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,040,000	\$ -	\$ -	\$ 4,040,000	\$ 4,040,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 43,400,234.15			\$ 3,853,941	\$ -	\$ -	\$ 3,853,941
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 113,508	\$ -	\$ -	\$ 113,508	\$ 113,508
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579

Propel NY - TO53 AS7

AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 359,455,633

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552
SUBTOTAL (Costs):	\$ 91,556,197	\$ 107,706,768	\$ 54,589,882	\$ 253,852,848
CONTRACTOR MARK-UP (OH&P)	\$ 16,480,115	\$ 19,387,218	\$ 9,826,179	\$ 45,693,513
SUBTOTAL:	\$ 108,036,313	\$ 127,093,987	\$ 64,416,061	\$ 299,546,360
CONTINGENCY ON ENTIRE PROJECT	\$ 21,607,263	\$ 25,418,797	\$ 12,883,212	\$ 59,909,272
TOTAL:	\$ 129,643,575	\$ 152,512,784	\$ 77,299,273	\$ 359,455,633

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	17.83	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 12,481,000	\$ 5,349,000	\$ 17,830,000
1.3	Flaggers	420	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 672,000	\$ 2,016,000	\$ 672,000	\$ 3,360,000
1.4	K Rail / Lane Control / Metal Plates	94,142	LF	\$ 30	\$ 18	\$ 12	\$ 2,824,272	\$ 1,694,563	\$ 1,129,709	\$ 5,648,544
1.5	Police Support	16,800.0	HR		\$ 120	\$ 27	\$ -	\$ 2,016,000	\$ 453,600	\$ 2,469,600
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	17.83	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 713,200	\$ 2,139,600	\$ 713,200	\$ 3,566,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 4,209,472	\$ 20,427,163	\$ 8,341,509	\$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	17.83	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,492,634	\$ 1,661,756	\$ 4,154,390
2.2	Formwork in Trench	734,083	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,468,166	\$ 1,101,125	\$ 367,042	\$ 2,936,333
2.3	Trench Excavation	63,349	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,108,602	\$ 475,115	\$ 1,583,717
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,959	SF	\$ 50	\$ 25	\$ 14	\$ 197,965	\$ 97,003	\$ 55,430	\$ 350,397
2.5	Supply & Install Thermal Backfill	34,971	CY	\$ 350	\$ 245	\$ 105	\$ 12,239,818	\$ 8,567,872	\$ 3,671,945	\$ 24,479,636
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	14,131	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 2,826,220	\$ 1,766,388	\$ 706,555	\$ 5,299,163
2.9	Conduit 8" HDPE	282,427	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 5,801,055	\$ 1,601,362	\$ 686,298	\$ 8,088,715
2.10	Conduit 4" HDPE	94,142	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 505,545	\$ 395,398	\$ 169,456	\$ 1,070,399
2.11	Conduit 2" HDPE	94,142	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 179,812	\$ 296,549	\$ 127,092	\$ 603,453
2.12	Warning Tape	94,142	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,121	\$ 23,536	\$ 9,414	\$ 47,071
2.13	Trench Box Shoring (Vault)	62	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,120,904	\$ 1,681,356	\$ 2,802,260
2.14	Splice Vault Excavation	20,150	CY		\$ 17.5	\$ 7.5	\$ -	\$ 352,625	\$ 151,125	\$ 503,750
2.15	Splice Vault Supply & Installation	62	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,170,000	\$ 1,023,000	\$ 2,387,000	\$ 5,580,000
2.16	Splice Vault Backfill	6,045	CY		\$ 14.0	\$ 6.0	\$ -	\$ 84,630	\$ 36,270	\$ 120,900
2.17	Jack and Bore along Route	212	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 169,600	\$ 339,200	\$ 339,200	\$ 848,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	470,712	LF			\$ 0.25	\$ -	\$ -	\$ 117,678	\$ 117,678
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	37,981	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 531,739	\$ 531,739	\$ 265,869	\$ 1,329,347

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,550	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 236,117	\$ 247,923	\$ 106,253	\$ 590,293
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	141	EA		\$ 400	\$ 1,200	\$ -	\$ 56,524	\$ 169,573	\$ 226,098
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	141	EA		\$ 10	\$ 15	\$ -	\$ 1,413	\$ 2,120	\$ 3,533
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	350	EA		\$ 400	\$ 1,200	\$ -	\$ 139,884	\$ 419,651	\$ 559,535
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 973,518	\$ 649,012	\$ -	\$ 973,518	\$ 649,012	\$ 1,622,530
2.26	Excess Materials Disposal to Certified Backfill	100,690	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,466,899	\$ 1,057,242	\$ 3,524,142
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	62	EA			\$ 4,000	\$ -	\$ -	\$ 248,000	\$ 248,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	83,499	CF		\$ 1.0	\$ 0.5	\$ -	\$ 83,499	\$ 41,749	\$ 125,248
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 26,340,158	\$ 24,872,226	\$ 15,602,203	\$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	296,549	FT	\$ 154	\$ 92	\$ 62	\$ 45,668,478	\$ 27,401,087	\$ 18,267,391	\$ 91,336,956
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	186	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,180,292	\$ 1,526,204	\$ 436,058	\$ 4,142,555
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	62	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,643,028	\$ 1,150,120	\$ 492,908	\$ 3,286,056
3.11	Fiber Optic Cable	98,850	FT	\$ 7	\$ 3	\$ 2	\$ 731,190	\$ 329,228	\$ 219,485	\$ 1,279,904
3.12	Ground Continuity Conductor	98,850	FT	\$ 13	\$ 8	\$ 5	\$ 1,288,899	\$ 744,040	\$ 496,027	\$ 2,528,966
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 51,678,717	\$ 31,199,912	\$ 19,925,937	\$ 102,804,566
AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit							\$ 82,228,347	\$ 76,499,301	\$ 43,869,648	\$ 202,597,296
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 3,611,068	\$ 2,407,379	\$ -	\$ 3,611,068	\$ 2,407,379	\$ 6,018,447
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.3	Construction Project Management / Supervision	1	LS		8,103,891.84		\$ -	\$ 8,103,892	\$ -	\$ 8,103,892
4.4	Utility PM and Project Oversight	1	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.5	Site Accommodation, Facilities, Storage	1	LS	2,025,972.96			\$ 2,025,973	\$ -	\$ -	\$ 2,025,973
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 10,129,865	\$ -	\$ -	\$ 10,129,865	\$ -	\$ 10,129,865
4.7	LiDAR /GPR	1.0	LS		\$ 364,675	\$ 243,117	\$ -	\$ 364,675	\$ 243,117	\$ 607,792
4.8	Geotech	18.0	Location		2,730.00	1,820.00	\$ -	\$ 49,140	\$ 32,760	\$ 81,900
4.9	Surveying/Staking	1	LS		\$ 850,909		\$ -	\$ 850,909	\$ -	\$ 850,909
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,025,973		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.12	Environmental-special studies/investigation	1	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 607,792	\$ -	\$ -	\$ 607,792	\$ 607,792
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,000,000		\$ -	\$ 2,000,000	\$ -	\$ 2,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 45,232	\$ -	\$ -	\$ 45,232	\$ 45,232
4.16	Legal Fees (Real estate)	1.00	LS		-	1,356.96	\$ -	\$ -	\$ 1,357	\$ 1,357
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	100.00%	LS			\$ 7,180,000	\$ -	\$ -	\$ 7,180,000	\$ 7,180,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 82,228,347			\$ 7,301,877	\$ -	\$ -	\$ 7,301,877
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			202,597	\$ -	\$ -	\$ 202,597	\$ 202,597
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,327,850	\$ 31,207,468	\$ 10,720,234	\$ 51,255,552

Propel NY - TO53 AS7

AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)

Total: \$ 268,731,745

AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
	Material Supply	Labor Supply	Equip Supply	Total
AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
1. SUBMARINE CABLE	\$ 45,158,272	\$ 59,271,737	\$ 42,238,005	\$ 146,668,014
2. TRANSITION STATION	\$ 555,750	\$ 593,355	\$ 558,702	\$ 1,707,807
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 5,506,592	\$ 24,417,233	\$ 11,482,660	\$ 41,406,484
SUBTOTAL (Costs):	\$ 51,220,615	\$ 84,282,324	\$ 54,279,367	\$ 189,782,306
CONTRACTOR MARK-UP (OH&P)	\$ 9,219,711	\$ 15,170,818	\$ 9,770,286	\$ 34,160,815
SUBTOTAL:	\$ 60,440,325	\$ 99,453,142	\$ 64,049,653	\$ 223,943,121
CONTINGENCY ON ENTIRE PROJECT	\$ 12,088,065	\$ 19,890,628	\$ 12,809,931	\$ 44,788,624
TOTAL:	\$ 72,528,390	\$ 119,343,771	\$ 76,859,584	\$ 268,731,745

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA + Vessel Install	100,246	FT	\$ 375	\$ 400	\$ 250	\$ 37,592,280	\$ 40,098,432	\$ 25,061,520	\$ 102,752,232
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 5,073,819	\$ 3,382,546	\$ -	\$ 5,073,819	\$ 3,382,546	\$ 8,456,364
1.3	Submarine Cable Splicing if Required 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA	-	EA				\$ -	\$ -	\$ -	\$ -
1.4	Cable Transition Splice	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.5	Outdoor Termination	12	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 334,929	\$ 446,572	\$ 334,929	\$ 1,116,430
1.6	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.7	HDD along Route	4,062	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,499,840	\$ 12,999,680	\$ 12,999,680	\$ 32,499,200
1.8	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 33,891	\$ 22,594	\$ -	\$ 33,891	\$ 22,594	\$ 56,485
1.9	Formwork in Trench		SF	\$ 2	\$ 1.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -
1.10	Trench Excavation	1,612	CY		\$ 17.5	\$ 7.5	\$ -	\$ 28,207	\$ 12,089	\$ 40,296
1.11	Supply & Install 6" Sand Bedding for direct bury conduits	101	SF	\$ 50	\$ 25	\$ 14	\$ 5,037	\$ 2,468	\$ 1,410	\$ 8,916
1.12	Supply & Install Thermal Backfill	0	CY	\$ 350	\$ 245	\$ 105	\$ -	\$ -	\$ -	\$ -
1.13	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
1.14	Native Backfill -direct bury conduits sys Trench	1,491	CY		\$ 14.0	\$ 6.0	\$ -	\$ 20,880	\$ 8,949	\$ 29,828
1.15	Conduit 15" HDPE	2,560	LF	\$ 150.0	\$ 45.0	\$ 30.0	\$ 384,000	\$ 115,200	\$ 76,800	\$ 576,000
1.16	Conduit 4" HDPE	1,280	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 6,874	\$ 5,376	\$ 2,304	\$ 14,554
1.17	Conduit 2" HDPE	0	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ -	\$ -	\$ -	\$ -
1.18	Warning Tape	2,560	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 384	\$ 640	\$ 256	\$ 1,280
TOTAL - MARINE CABLE :							\$ 45,158,272	\$ 59,271,737	\$ 42,238,005	\$ 146,668,014
2. TRANSITION STATION										
2.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,094	\$ 14,063	\$ 35,156
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	1,300	LF	7.50	5.25	2.25	\$ 9,750	\$ 6,825	\$ 2,925	\$ 19,500
2.4	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.5	Splice Vault Excavation	1,593	CY		\$ 17.5	\$ 7.5	\$ -	\$ 27,876	\$ 11,947	\$ 39,822
2.6	Splice Vault Supply & Installation	4	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 280,000	\$ 90,000	\$ 210,000	\$ 580,000
2.7	Splice Vault Backfill	478	CY		\$ 14.0	\$ 6.0	\$ -	\$ 6,690	\$ 2,867	\$ 9,557
2.8	Air Test Ducts	3,840	LF			\$ 0.25	\$ -	\$ -	\$ 960	\$ 960
2.9	Restoration (incl. Paving)	19,000	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 266,000	\$ 266,000	\$ 133,000	\$ 665,000
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill	1,606	CY		\$ 24.5	\$ 10.5	\$ -	\$ 39,349	\$ 16,864	\$ 56,213
2.15	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	3,205	CF		\$ 1.0	\$ 0.5	\$ -	\$ 3,205	\$ 1,602	\$ 4,807
2.20							\$ -	\$ -	\$ -	\$ -
TOTAL - Transition station :							\$ 555,750	\$ 593,355	\$ 558,702	\$ 1,707,807
AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)							\$ 45,714,022	\$ 59,865,091	\$ 42,796,707	\$ 148,375,821
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.3	Construction Project Management / Supervision	1	LS		5,935,032.85		\$ -	\$ 5,935,033	\$ -	\$ 5,935,033
3.4	Utility PM and Project Oversight	1	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.5	Site Accommodation, Facilities, Storage	1	LS	1,483,758.21			\$ 1,483,758	\$ -	\$ -	\$ 1,483,758
	Engineering									
3.6	Design Engineering	1	LS		\$ 7,418,791		\$ -	\$ 7,418,791	\$ -	\$ 7,418,791
3.7	Surveying/Staking	1	LS		\$ 1,038,631		\$ -	\$ 1,038,631	\$ -	\$ 1,038,631
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
3.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,483,758		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
3.12	Warranties / LOC's	1	LS		\$ 445,127		\$ -	\$ 445,127	\$ -	\$ 445,127
3.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
3.14	Real Estate (Acquisition)	1	LS			\$ 119,087	\$ -	\$ -	\$ 119,087	\$ 119,087
3.15	Legal Fees (Real estate)	1.00	LS		-	3,572.61	\$ -	\$ -	\$ 3,573	\$ 3,573
3.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
3.17	Bonds	1	LS			\$ 5,360,000	\$ -	\$ -	\$ 5,360,000	\$ 5,360,000
3.18	Sales Tax on Materials	8.8%	LS	\$ 45,714,022			\$ 4,022,834	\$ -	\$ -	\$ 4,022,834
3.19	Contractor Permits	1	LS		\$ 148,376		\$ -	\$ 148,376	\$ -	\$ 148,376
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,506,592	\$ 24,417,233	\$ 11,482,660	\$ 41,406,484

Propel NY - TO53 AS7

AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)

Total: \$ 57,646,592

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 458,544	\$ 2,358,566	\$ 901,978	\$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 3,609,216	\$ 3,766,387	\$ 2,219,465	\$ 9,595,067
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 9,600,745	\$ 5,671,607	\$ 3,650,873	\$ 18,923,225
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,536,137	\$ 5,351,413	\$ 1,585,940	\$ 8,473,490
SUBTOTAL (Costs):	\$ 15,204,642	\$ 17,147,973	\$ 8,358,255	\$ 40,710,870
CONTRACTOR MARK-UP (OH&P)	\$ 2,736,836	\$ 3,086,635	\$ 1,504,486	\$ 7,327,957
SUBTOTAL:	\$ 17,941,478	\$ 20,234,608	\$ 9,862,741	\$ 48,038,827
CONTINGENCY ON ENTIRE PROJECT	\$ 3,588,296	\$ 4,046,922	\$ 1,972,548	\$ 9,607,765
TOTAL:	\$ 21,529,773	\$ 24,281,530	\$ 11,835,289	\$ 57,646,592

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	1.66	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,162,000	\$ 498,000	\$ 1,660,000
1.3	Flaggers	60	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 96,000	\$ 288,000	\$ 96,000	\$ 480,000
1.4	K Rail / Lane Control / Metal Plates	8,765	LF	\$ 30	\$ 18	\$ 12	\$ 262,944	\$ 157,766	\$ 105,178	\$ 525,888
1.5	Police Support	3,600.0	HR		\$ 120	\$ 27	\$ -	\$ 432,000	\$ 97,200	\$ 529,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	1.66	Mile	\$ 60,000	\$ 180,000	\$ 60,000	\$ 99,600	\$ 298,800	\$ 99,600	\$ 498,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 458,544	\$ 2,358,566	\$ 901,978	\$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y57 & Y58 -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 232,068	\$ 154,712	\$ 386,780
2.2	Formwork in Trench	70,118	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 140,237	\$ 105,178	\$ 35,059	\$ 280,474
2.3	Trench Excavation	5,189	CY		\$ 17.5	\$ 7.5	\$ -	\$ 90,803	\$ 38,916	\$ 129,719
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	540	CY	\$ 50	\$ 25	\$ 14	\$ 27,025	\$ 13,242	\$ 7,567	\$ 47,834
2.5	Supply & Install Thermal Backfill -conduit level	4,769	CY	\$ 350	\$ 245	\$ 105	\$ 1,668,988	\$ 1,168,292	\$ 500,697	\$ 3,337,977
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	\$ 350	\$ 245.0	\$ 105.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	1,667	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 333,355	\$ 208,347	\$ 83,339	\$ 625,040
2.8	Conduit 8" HDPE	52,589	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 1,080,174	\$ 298,178	\$ 127,791	\$ 1,506,143
2.9	Conduit 4" HDPE	17,530	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 94,134	\$ 73,624	\$ 31,553	\$ 199,312
2.10	Conduit 2" HDPE	17,530	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 33,482	\$ 55,218	\$ 23,665	\$ 112,365
2.11	Warning Tape	8,765	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 1,315	\$ 2,191	\$ 876	\$ 4,382
2.12	Trench Box Shoring (Vault)	4	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 72,316	\$ 108,475	\$ 180,791
2.13	Splice Vault Excavation	780	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,650	\$ 5,850	\$ 19,500
2.14	Splice Vault Supply & Installation	4	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 140,000	\$ 66,000	\$ 154,000	\$ 360,000
2.15	Splice Vault Backfill	234	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,276	\$ 1,404	\$ 4,680
2.16	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	Air Test Ducts	87,648	LF			\$ 0.25	\$ -	\$ -	\$ 21,912	\$ 21,912
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,477	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 62,676	\$ 62,676	\$ 31,338	\$ 156,689
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,244	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 27,831	\$ 29,223	\$ 12,524	\$ 69,578
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,667	\$ 20,001	\$ 26,668
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	17	EA		\$ 10	\$ 15	\$ -	\$ 167	\$ 250	\$ 417
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	48	EA		\$ 400	\$ 1,200	\$ -	\$ 19,074	\$ 57,222	\$ 76,297
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 90,636	\$ 60,424	\$ -	\$ 90,636	\$ 60,424	\$ 151,060
2.24	Excess Materials Disposal to Certified Backfill	7,455	CY		\$ 24.5	\$ 10.5	\$ -	\$ 182,652	\$ 78,279	\$ 260,932
2.25	Rock Excavation and Removal	3,979	CY		\$ 243	\$ 162	\$ -	\$ 966,939	\$ 644,626	\$ 1,611,566
2.26	Dewatering	4	EA			\$ 4,000	\$ -	\$ -	\$ 16,000	\$ 16,000
2.27	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Excavated material - stockpile management	5,969	CF		\$ 1.0	\$ 0.5	\$ -	\$ 5,969	\$ 2,984	\$ 8,953
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 3,609,216	\$ 3,766,387	\$ 2,219,465	\$ 9,595,067
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.7	Y57 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.8	Y57 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.9	Y57 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y57 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y57 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y57 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.1	Y58 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	\$ 154	\$ 92	\$ 62	\$ 4,251,804	\$ 2,551,083	\$ 1,700,722	\$ 8,503,609
3.2	Y58 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 140,664	\$ 98,465	\$ 28,133	\$ 267,262
3.3	Y58 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Y58 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Y58 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Y58 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	4	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 106,002	\$ 74,201	\$ 31,801	\$ 212,004
3.11	Fiber Optic Cable	18,406	FT	\$ 7	\$ 3	\$ 2	\$ 136,150	\$ 61,303	\$ 40,869	\$ 238,322
3.12	Ground Continuity Conductor	18,406	FT	\$ 13	\$ 8	\$ 5	\$ 239,997	\$ 138,543	\$ 92,362	\$ 470,901
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 9,600,745	\$ 5,671,607	\$ 3,650,873	\$ 18,923,225
AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)							\$ 13,668,505	\$ 11,796,560	\$ 6,772,316	\$ 32,237,380
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 557,066	\$ 371,378	\$ -	\$ 557,066	\$ 371,378	\$ 928,444
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.3	Construction Project Management / Supervision	1	LS		1,289,495.22		\$ -	\$ 1,289,495	\$ -	\$ 1,289,495
4.4	Utility PM and Project Oversight	1	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.5	Site Accommodation, Facilities, Storage	1	LS	322,373.80			\$ 322,374	\$ -	\$ -	\$ 322,374
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 1,611,869	\$ -	\$ -	\$ 1,611,869	\$ -	\$ 1,611,869
4.7	LiDAR /GPR	1.0	LS		\$ 58,027	\$ 38,685	\$ -	\$ 58,027	\$ 38,685	\$ 96,712
4.8	Geotech	2.0	Location		2,730.00	1,820.00	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 225,662		\$ -	\$ 225,662	\$ -	\$ 225,662
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 322,374		\$ -	\$ 322,374	\$ -	\$ 322,374
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 96,712		\$ -	\$ 96,712	\$ -	\$ 96,712
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.16	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,140,000	\$ -	\$ -	\$ 1,140,000	\$ 1,140,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 13,668,504.91			\$ 1,213,763	\$ -	\$ -	\$ 1,213,763
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 32,237	\$ -	\$ -	\$ 32,237	\$ 32,237
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,536,137	\$ 5,351,413	\$ 1,585,940	\$ 8,473,490

Propel NY - TO53 AS7

AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit

Total: \$ 192,457,231

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,062,976	\$ 10,216,426	\$ 4,057,750	\$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 13,413,863	\$ 17,463,031	\$ 12,869,325	\$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 24,404,937	\$ 14,775,402	\$ 9,279,739	\$ 48,460,079
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,626,936	\$ 17,106,525	\$ 5,639,213	\$ 27,372,674
SUBTOTAL (Costs):	\$ 44,508,712	\$ 59,561,384	\$ 31,846,028	\$ 135,916,124
CONTRACTOR MARK-UP (OH&P)	\$ 8,011,568	\$ 10,721,049	\$ 5,732,285	\$ 24,464,902
SUBTOTAL:	\$ 52,520,280	\$ 70,282,433	\$ 37,578,313	\$ 160,381,026
CONTINGENCY ON ENTIRE PROJECT	\$ 10,504,056	\$ 14,056,487	\$ 7,515,663	\$ 32,076,205
TOTAL:	\$ 63,024,336	\$ 84,338,920	\$ 45,093,976	\$ 192,457,231

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

New Rochelle Station To Sprainbrook segment is 8.14 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.14	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 5,698,000	\$ 2,442,000	\$ 8,140,000
1.3	Flaggers	280	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 448,000	\$ 1,344,000	\$ 448,000	\$ 2,240,000
1.4	K Rail / Lane Control / Metal Plates	42,979	LF	\$ 30	\$ 18	\$ 12	\$ 1,289,376	\$ 773,626	\$ 515,750	\$ 2,578,752
1.5	Police Support	11,200.0	HR		\$ 120	\$ 27	\$ -	\$ 1,344,000	\$ 302,400	\$ 1,646,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	80.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 80,000	\$ 24,000	\$ 104,000
1.9	Existing Utility Protection	8.14	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 325,600	\$ 976,800	\$ 325,600	\$ 1,628,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,062,976	\$ 10,216,426	\$ 4,057,750	\$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.14	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,137,972	\$ 758,648	\$ 1,896,620
2.2	Formwork in Trench	318,202	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 636,403	\$ 477,302	\$ 159,101	\$ 1,272,806
2.3	Trench Excavation	16,476	CY		\$ 17.5	\$ 7.5	\$ -	\$ 288,326	\$ 123,568	\$ 411,894
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,716	SF	\$ 50	\$ 25	\$ 14	\$ 85,811	\$ 42,048	\$ 24,027	\$ 151,886
2.5	Supply & Install Thermal Backfill	15,159	CY	\$ 350	\$ 245	\$ 105	\$ 5,305,570	\$ 3,713,899	\$ 1,591,671	\$ 10,611,139
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	6,125	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,225,076	\$ 765,673	\$ 306,269	\$ 2,297,018
2.9	Conduit 8" HDPE	128,938	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 2,648,378	\$ 731,076	\$ 313,318	\$ 3,692,773
2.10	Conduit 4" HDPE	42,979	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 230,798	\$ 180,513	\$ 77,363	\$ 488,674
2.11	Conduit 2" HDPE	42,979	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 82,090	\$ 135,384	\$ 58,022	\$ 275,497
2.12	Warning Tape	42,979	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 6,447	\$ 10,745	\$ 4,298	\$ 21,490
2.13	Trench Box Shoring (Vault)	40	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 723,164	\$ 1,084,746	\$ 1,807,910
2.14	Splice Vault Excavation	7,800	CY		\$ 17.5	\$ 7.5	\$ -	\$ 136,500	\$ 58,500	\$ 195,000
2.15	Splice Vault Supply & Installation	40	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,400,000	\$ 660,000	\$ 1,540,000	\$ 3,600,000
2.16	Splice Vault Backfill	2,340	CY		\$ 14.0	\$ 6.0	\$ -	\$ 32,760	\$ 14,040	\$ 46,800
2.17	Jack and Bore along Route	310	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 248,000	\$ 496,000	\$ 496,000	\$ 1,240,000
2.18	HDD along Route	1,494	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,195,200	\$ 2,390,400	\$ 2,390,400	\$ 5,976,000
2.19	Air Test Ducts	214,896	LF			\$ 0.25	\$ -	\$ -	\$ 53,724	\$ 53,724

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,317	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 242,436	\$ 242,436	\$ 121,218	\$ 606,089
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,810	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 107,653	\$ 113,036	\$ 48,444	\$ 269,132
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	61	EA		\$ 400	\$ 1,200	\$ -	\$ 24,502	\$ 73,505	\$ 98,006
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	61	EA		\$ 10	\$ 15	\$ -	\$ 613	\$ 919	\$ 1,531
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		\$ 400	\$ 1,200	\$ -	\$ 60,635	\$ 181,905	\$ 242,540
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 444,444	\$ 296,296	\$ -	\$ 444,444	\$ 296,296	\$ 740,740
2.26	Excess Materials Disposal to Certified Backfill	28,517	CY		\$ 24.5	\$ 10.5	\$ -	\$ 698,654	\$ 299,423	\$ 998,078
2.27	Rock Excavation and Removal	16,184	CY		\$ 243	\$ 162	\$ -	\$ 3,932,675	\$ 2,621,783	\$ 6,554,458
2.28	Dewatering	40	EA			\$ 4,000	\$ -	\$ -	\$ 160,000	\$ 160,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	24,276	CF		\$ 1.0	\$ 0.5	\$ -	\$ 24,276	\$ 12,138	\$ 36,414
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 13,413,863	\$ 17,463,031	\$ 12,869,325	\$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	\$ 154	\$ 92	\$ 62	\$ 20,849,210	\$ 12,509,526	\$ 8,339,684	\$ 41,698,420
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,406,640	\$ 984,648	\$ 281,328	\$ 2,672,616
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	40	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,060,018	\$ 742,013	\$ 318,005	\$ 2,120,036
3.11	Fiber Optic Cable	45,128	FT	\$ 7	\$ 3	\$ 2	\$ 333,813	\$ 150,304	\$ 100,203	\$ 584,319
3.12	Ground Continuity Conductor	45,128	FT	\$ 13	\$ 8	\$ 5	\$ 588,426	\$ 339,680	\$ 226,453	\$ 1,154,559
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 24,404,937	\$ 14,775,402	\$ 9,279,739	\$ 48,460,079
AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit							\$ 39,881,776	\$ 42,454,859	\$ 26,206,815	\$ 108,543,450
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,059,850	\$ 1,373,233	\$ -	\$ 2,059,850	\$ 1,373,233	\$ 3,433,084
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.3	Construction Project Management / Supervision	1	LS		4,341,737.99		\$ -	\$ 4,341,738	\$ -	\$ 4,341,738
4.4	Utility PM and Project Oversight	1	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.5	Site Accommodation, Facilities, Storage	1	LS	1,085,434.50			\$ 1,085,434	\$ -	\$ -	\$ 1,085,434
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,427,172	\$ -	\$ -	\$ 5,427,172	\$ -	\$ 5,427,172
4.7	LiDAR /GPR	1.0	LS		\$ 195,378	\$ 130,252	\$ -	\$ 195,378	\$ 130,252	\$ 325,630
4.8	Geotech	9.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 455,882		\$ -	\$ 455,882	\$ -	\$ 455,882
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,085,434		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.12	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 325,630		\$ -	\$ 325,630	\$ -	\$ 325,630
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 164,858	\$ -	\$ -	\$ 164,858	\$ 164,858
4.16	Legal Fees (Real estate)	1.00	LS		-	4,945.74	\$ -	\$ -	\$ 4,946	\$ 4,946
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,000
4.19	Bonds	1	LS			\$ 3,840,000	\$ -	\$ -	\$ 3,840,000	\$ 3,840,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 39,881,775.62			\$ 3,541,502	\$ -	\$ -	\$ 3,541,502
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 108,543	\$ -	\$ -	\$ 108,543	\$ 108,543
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,626,936	\$ 17,106,525	\$ 5,639,213	\$ 27,372,674

Propel NY - TO53 AS7

AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit

Total: \$ 467,007,449

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,046,400	\$ 15,369,440	\$ 5,920,160	\$ 24,336,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 36,800,154	\$ 41,782,582	\$ 33,880,890	\$ 112,463,626
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 64,004,282	\$ 38,526,070	\$ 24,680,932	\$ 127,211,284
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,862,063	\$ 40,432,240	\$ 13,502,307	\$ 65,796,610
CONTRACTOR MARK-UP (OH&P)	\$ 20,828,322	\$ 24,499,860	\$ 14,037,172	\$ 59,365,354
SUBTOTAL:	\$ 136,541,222	\$ 160,610,191	\$ 92,021,461	\$ 389,172,875
CONTINGENCY ON ENTIRE PROJECT	\$ 27,308,244	\$ 32,122,038	\$ -	\$ 77,834,575
TOTAL:	\$ 163,849,466	\$ 192,732,230	\$ 92,021,461	\$ 467,007,449

Description of Work: T double circuit 345 kV electric underground transmission lines will extend from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Eastern Queens Substation in the Borough of Queens, New York City, Queens County. The proposed 345 kV electric underground transmission line will terminate at the Dunwoodie Substation in the City of Yonkers, Westchester County. The proposed route will be approximately 32 miles, utilizing 4000kcmil XLPE cable for the onshore portions and 5000kcmil cable for a marine crossing via Horizontal Directional Drill (HDD) or equivalent trenchless technique. Between the three substations, the proposed route crosses through three villages, one town, one city, and three counties.The segment from Barrett to Eastern Queens is 11 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,700,000	\$ 3,300,000	\$ 11,000,000
1.3	Flaggers	540	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 864,000	\$ 2,592,000	\$ 864,000	\$ 4,320,000
1.4	K Rail / Lane Control / Metal Plates	58,080	LF	\$ 30	\$ 18	\$ 12	\$ 1,742,400	\$ 1,045,440	\$ 696,960	\$ 3,484,800
1.5	Police Support	21,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,592,000	\$ 583,200	\$ 3,175,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	11.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 440,000	\$ 1,320,000	\$ 440,000	\$ 2,200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,046,400	\$ 15,369,440	\$ 5,920,160	\$ 24,336,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 1,537,800	\$ 1,025,200	\$ -	\$ 1,537,800	\$ 1,025,200	\$ 2,563,000
2.2	Formwork in Trench	425,216	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 850,432	\$ 637,824	\$ 212,608	\$ 1,700,864
2.3	Trench Excavation	52,443	CY		\$ 17.5	\$ 7.5	\$ -	\$ 917,758	\$ 393,325	\$ 1,311,083
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,278	SF	\$ 50	\$ 25	\$ 14	\$ 163,885	\$ 80,304	\$ 45,888	\$ 290,077
2.5	Supply & Install Thermal Backfill	28,918	CY	\$ 350	\$ 245	\$ 105	\$ 10,121,174	\$ 7,084,822	\$ 3,036,352	\$ 20,242,349
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	10,108	CY	\$ 200	\$ 125	\$ 50	\$ 2,021,548	\$ 1,263,467	\$ 505,387	\$ 3,790,402
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" HDPE	348,480	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 7,157,779	\$ 1,975,882	\$ 846,806	\$ 9,980,467
2.10	Conduit 4" HDPE	116,160	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 623,779	\$ 487,872	\$ 209,088	\$ 1,320,739
2.11	Conduit 2" HDPE	116,160	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 221,866	\$ 365,904	\$ 156,816	\$ 744,586
2.12	Warning Tape	58,080	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,712	\$ 14,520	\$ 5,808	\$ 29,040
2.13	Trench Box Shoring (Vault)	70	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,265,537	\$ 1,898,305	\$ 3,163,842
2.14	Splice Vault Excavation	22,750	CY		\$ 17.5	\$ 7.5	\$ -	\$ 398,125	\$ 170,625	\$ 568,750
2.15	Splice Vault Supply & Installation	70	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,450,000	\$ 1,155,000	\$ 2,695,000	\$ 6,300,000
2.16	Splice Vault Backfill	6,825	CY	\$ 14.0	\$ 14.0	\$ 6.0	\$ -	\$ 95,550	\$ 40,950	\$ 136,500
2.17	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	4,184	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,694,400	\$ 13,388,800	\$ 13,388,800	\$ 33,472,000
2.19	Microtunnel (MTBM)	744	LF	\$ 2,880	\$ 5,040	\$ 6,480	\$ 2,142,720	\$ 3,749,760	\$ 4,821,120	\$ 10,713,600
2.20	Air Test Ducts	580,800	LF			\$ 0.25	\$ -	\$ -	\$ 145,200	\$ 145,200

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, ASPHALT, 2" SURFACE COURSE	30,122	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 421,708	\$ 421,708	\$ 210,854	\$ 1,054,271
2.22	PVMT, AGGREGATE, 10", BASE COURSE	8,367	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 187,259	\$ 196,621	\$ 84,266	\$ 468,146
2.23	Restoration (incl. Paving)	266,778	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 3,734,892	\$ 3,734,892	\$ 1,867,446	\$ 9,337,230
2.24	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	101	EA		\$ 400	\$ 1,200	\$ -	\$ 40,431	\$ 121,293	\$ 161,724
2.25	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	101	EA		\$ 10	\$ 15	\$ -	\$ 1,011	\$ 1,516	\$ 2,527
2.26	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	289	EA		\$ 400	\$ 1,200	\$ -	\$ 115,671	\$ 347,012	\$ 462,682
2.27	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 600,600	\$ 400,400	\$ -	\$ 600,600	\$ 400,400	\$ 1,001,000
2.28	Excess Materials Disposal to Certified Backfill	88,879	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,177,531	\$ 933,227	\$ 3,110,758
2.29	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Dewatering	70	EA			\$ 4,000	\$ -	\$ -	\$ 280,000	\$ 280,000
2.31	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.33	Excavated material - stockpile management	75,193	CF		\$ 1.0	\$ 0.5	\$ -	\$ 75,193	\$ 37,597	\$ 112,790
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 36,800,154	\$ 41,782,582	\$ 33,880,890	\$ 112,463,626
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	182,952	FT	\$ 154	\$ 92	\$ 62	\$ 28,174,608	\$ 16,904,765	\$ 11,269,843	\$ 56,349,216
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	105	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,230,810	\$ 861,567	\$ 246,162	\$ 2,338,539
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	182,952	FT	\$ 154	\$ 92	\$ 62	\$ 28,174,608	\$ 16,904,765	\$ 11,269,843	\$ 56,349,216
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	105	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 1,230,810	\$ 861,567	\$ 246,162	\$ 2,338,539
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	70	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,855,032	\$ 1,298,522	\$ 556,509	\$ 3,710,063
3.11	Fiber Optic Cable	147,032	FT	\$ 7	\$ 3	\$ 2	\$ 1,087,599	\$ 489,706	\$ 326,471	\$ 1,903,776
3.12	Ground Continuity Conductor	147,032	FT	\$ 13	\$ 8	\$ 5	\$ 1,917,156	\$ 1,106,713	\$ 737,809	\$ 3,761,678
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 64,004,282	\$ 38,526,070	\$ 24,680,932	\$ 127,211,284
AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit							\$ 103,850,837	\$ 95,678,092	\$ 64,481,982	\$ 264,010,910
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 4,804,802	\$ 3,203,201	\$ -	\$ 4,804,802	\$ 3,203,201	\$ 8,008,004
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,640,109.10		\$ -	\$ 2,640,109	\$ -	\$ 2,640,109
4.3	Construction Project Management / Supervision	1	LS		10,560,436.42		\$ -	\$ 10,560,436	\$ -	\$ 10,560,436
4.4	Utility PM and Project Oversight	1	LS		2,640,109.10		\$ -	\$ 2,640,109	\$ -	\$ 2,640,109
4.5	Site Accommodation, Facilities, Storage	1	LS	2,640,109.10			\$ 2,640,109	\$ -	\$ -	\$ 2,640,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 13,200,546	\$ -	\$ -	\$ 13,200,546	\$ -	\$ 13,200,546
4.7	LiDAR /GPR	1.0	LS		\$ 475,220	\$ 316,813	\$ -	\$ 475,220	\$ 316,813	\$ 792,033
4.8	Geotech	11.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 1,108,846		\$ -	\$ 1,108,846	\$ -	\$ 1,108,846
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,640,109		\$ -	\$ 2,640,109	\$ -	\$ 2,640,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 792,033		\$ -	\$ 792,033	\$ -	\$ 792,033
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 347,827	\$ -	\$ -	\$ 347,827	\$ 347,827
4.16	Legal Fees (Real estate)	1.00	LS		-	10,434.81	\$ -	\$ -	\$ 10,435	\$ 10,435
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 9,340,000	\$ -	\$ -	\$ 9,340,000	\$ 9,340,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 103,850,836.52			\$ 9,221,954	\$ -	\$ -	\$ 9,221,954
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 264,011	\$ -	\$ -	\$ 264,011	\$ 264,011
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,862,063	\$ 40,432,240	\$ 13,502,307	\$ 65,796,610

Propel NY - TO53 AS7

AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit

Total: \$ 484,260,979

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,254,400	\$ 25,863,840	\$ 10,328,960	\$ 41,447,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 34,941,450	\$ 43,339,460	\$ 31,669,453	\$ 109,950,363
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 60,773,943	\$ 36,694,040	\$ 23,450,745	\$ 120,918,728
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,689,281	\$ 42,793,063	\$ 15,193,582	\$ 69,675,926
SUBTOTAL (Costs):	\$ 112,659,074	\$ 148,690,403	\$ 80,642,740	\$ 341,992,217
CONTRACTOR MARK-UP (OH&P)	\$ 20,278,633	\$ 26,764,273	\$ 14,515,693	\$ 61,558,599
SUBTOTAL:	\$ 132,937,707	\$ 175,454,676	\$ 95,158,433	\$ 403,550,816
CONTINGENCY ON ENTIRE PROJECT	\$ 26,587,541	\$ 35,090,935	\$ 19,031,687	\$ 80,710,163
TOTAL:	\$ 159,525,248	\$ 210,545,611	\$ 114,190,120	\$ 484,260,979

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.

Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	21.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 14,700,000	\$ 6,300,000	\$ 21,000,000
1.3	Flaggers	680	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,088,000	\$ 3,264,000	\$ 1,088,000	\$ 5,440,000
1.4	K Rail / Lane Control / Metal Plates	110,880	LF	\$ 30	\$ 18	\$ 12	\$ 3,326,400	\$ 1,995,840	\$ 1,330,560	\$ 6,652,800
1.5	Police Support	27,200.0	HR		\$ 120	\$ 27	\$ -	\$ 3,264,000	\$ 734,400	\$ 3,998,400
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	120.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 120,000	\$ 36,000	\$ 156,000
1.9	Existing Utility Protection	21.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 840,000	\$ 2,520,000	\$ 840,000	\$ 4,200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,254,400	\$ 25,863,840	\$ 10,328,960	\$ 41,447,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	21.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,935,800	\$ 1,957,200	\$ 4,893,000
2.2	Formwork in Trench	813,112	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,626,224	\$ 1,219,668	\$ 406,556	\$ 3,252,448
2.3	Trench Excavation	51,068	CY		\$ 17.5	\$ 7.5	\$ -	\$ 893,689	\$ 383,010	\$ 1,276,698
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,386	SF	\$ 50	\$ 25	\$ 14	\$ 219,277	\$ 107,446	\$ 61,397	\$ 388,120
2.5	Supply & Install Thermal Backfill	38,736	CY	\$ 350	\$ 245	\$ 105	\$ 13,557,513	\$ 9,490,259	\$ 4,067,254	\$ 27,115,027
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.8	Supply & Install Ductbank Concrete	15,652	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,130,481	\$ 1,956,551	\$ 782,620	\$ 5,869,652
2.9	Conduit 8" HDPE	332,640	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 6,832,426	\$ 1,886,069	\$ 808,315	\$ 9,526,810
2.10	Conduit 4" HDPE	110,880	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 595,426	\$ 465,696	\$ 199,584	\$ 1,260,706
2.11	Conduit 2" HDPE	110,880	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 211,781	\$ 349,272	\$ 149,688	\$ 710,741
2.12	Warning Tape	110,880	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 16,632	\$ 27,720	\$ 11,088	\$ 55,440
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	17,550	CY		\$ 17.5	\$ 7.5	\$ -	\$ 307,125	\$ 131,625	\$ 438,750
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	5,265	CY		\$ 14.0	\$ 6.0	\$ -	\$ 73,710	\$ 31,590	\$ 105,300
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	6,721	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 5,376,800	\$ 10,753,600	\$ 10,753,600	\$ 26,884,000
2.19	Air Test Ducts	554,400	LF			\$ 0.25	\$ -	\$ -	\$ 138,600	\$ 138,600

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	42,286	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 592,010	\$ 592,010	\$ 296,005	\$ 1,480,025
2.21	PVMT, AGGREGATE, 10", BASE COURSE	11,746	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 262,881	\$ 276,025	\$ 118,296	\$ 657,202
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	157	EA		\$ 400	\$ 1,200	\$ -	\$ 62,610	\$ 187,829	\$ 250,438
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	157	EA		\$ 10	\$ 15	\$ -	\$ 1,565	\$ 2,348	\$ 3,913
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	387	EA		\$ 400	\$ 1,200	\$ -	\$ 154,943	\$ 464,829	\$ 619,772
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,146,600	\$ 764,400	\$ -	\$ 1,146,600	\$ 764,400	\$ 1,911,000
2.26	Excess Materials Disposal to Certified Backfill	82,359	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,017,791	\$ 864,768	\$ 2,882,559
2.27	Rock Excavation and Removal	24,951	CY		\$ 243	\$ 162	\$ -	\$ 6,062,999	\$ 4,042,000	\$ 10,104,999
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	68,618	CF		\$ 1.0	\$ 0.5	\$ -	\$ 68,618	\$ 34,309	\$ 102,927
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 34,941,450	\$ 43,339,460	\$ 31,669,453	\$ 109,950,363
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	349,272	FT	\$ 154	\$ 92	\$ 62	\$ 53,787,888	\$ 32,272,733	\$ 21,515,155	\$ 107,575,776
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	216	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,531,952	\$ 1,772,366	\$ 506,390	\$ 4,810,709
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	\$ 154	\$ 92	\$ 62	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	72	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,908,032	\$ 1,335,623	\$ 572,410	\$ 3,816,065
3.11	Fiber Optic Cable	116,424	FT	\$ 7	\$ 3	\$ 2	\$ 861,188	\$ 387,762	\$ 258,508	\$ 1,507,458
3.12	Ground Continuity Conductor	116,424	FT	\$ 13	\$ 8	\$ 5	\$ 1,518,053	\$ 876,323	\$ 584,216	\$ 2,978,592
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 60,773,943	\$ 36,694,040	\$ 23,450,745	\$ 120,918,728
AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit							\$ 100,969,793	\$ 105,897,340	\$ 65,449,158	\$ 272,316,291
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,140,395	\$ 3,426,930	\$ -	\$ 5,140,395	\$ 3,426,930	\$ 8,567,325
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,723,162.91		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.3	Construction Project Management / Supervision	1	LS		10,892,651.66		\$ -	\$ 10,892,652	\$ -	\$ 10,892,652
4.4	Utility PM and Project Oversight	1	LS		2,723,162.91		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.5	Site Accommodation, Facilities, Storage	1	LS	2,723,162.91			\$ 2,723,163	\$ -	\$ -	\$ 2,723,163
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 13,615,815	\$ -	\$ -	\$ 13,615,815	\$ -	\$ 13,615,815
4.7	LiDAR /GPR	1.0	LS		\$ 490,169	\$ 326,780	\$ -	\$ 490,169	\$ 326,780	\$ 816,949
4.8	Geotech	21.0	Location		2,730.00	1,820.00	\$ -	\$ 57,330	\$ 38,220	\$ 95,550
4.9	Surveying/Staking	1	LS		\$ 1,906,214		\$ -	\$ 1,906,214	\$ -	\$ 1,906,214
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 2,723,163		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.12	Environmental-special studies/investigation	1	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 816,949	\$ -	\$ -	\$ 816,949	\$ 816,949
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 613,968	\$ -	\$ -	\$ 613,968	\$ 613,968
4.16	Legal Fees (Real estate)	1.00	LS		-	18,419.04	\$ -	\$ -	\$ 18,419	\$ 18,419
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	1	Crossing		\$ 1,000		\$ -	\$ 1,000	\$ -	\$ 1,000
4.19	Bonds	100.00%	LS			\$ 9,680,000	\$ -	\$ -	\$ 9,680,000	\$ 9,680,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 100,969,793			\$ 8,966,118	\$ -	\$ -	\$ 8,966,118
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 272,316	\$ -	\$ -	\$ 272,316	\$ 272,316
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,689,281	\$ 42,793,063	\$ 15,193,582	\$ 69,675,926

Propel NY - TO53 AS7

AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit

Total: \$ 535,503,314

AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit				
	Material Supply	Labor Supply	Equip Supply	Total
AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit				
1. SUBMARINE CABLE	\$ 70,691,554	\$ 143,104,302	\$ 92,515,795	\$ 306,311,652
2. TRANSITION STATION	\$ 192,750	\$ 216,262	\$ 244,267	\$ 653,280
2. MOB/DEMOB, DESIGN, PERMITTING, T&C, PM & INDIRECTS	\$ 9,307,468	\$ 45,172,406	\$ 16,735,501	\$ 71,215,375
SUBTOTAL (Costs):	\$ 80,191,773	\$ 188,492,971	\$ 109,495,563	\$ 378,180,307
CONTRACTOR MARK-UP (OH&P)	\$ 14,434,519	\$ 33,928,735	\$ 19,709,201	\$ 68,072,455
SUBTOTAL:	\$ 94,626,292	\$ 222,421,706	\$ 129,204,765	\$ 446,252,762
CONTINGENCY ON ENTIRE PROJECT	\$ 18,925,258	\$ 44,484,341	\$ 25,840,953	\$ 89,250,552
TOTAL:	\$ 113,551,550	\$ 266,906,047	\$ 155,045,718	\$ 535,503,314

Description of Work: 320 kV HVDC line will initiate at an HVDC converter station located adjacent to the Northport Generation facility and interconnect with the Northport substation via a new 345kV ring bus substation and three 345/138 autotransformers. The HVDC line will extend from Northport in the Hamlet of For Salonga in Suffolk County to the Sprain Brook Substation in Westchester County. The proposed route will be approximately 34.1 miles, utilizing marine 5900kcmil Cu/XLPE/Pb/SWA cable and terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable. Please see the Design Basis Manual, Attachment B.1.1, for more details. The proposed route connects through two counties, two cities, and two villages.

Beginning at a point in the Hamlet of Fort Salonga in Suffolk County, the proposed route travels through the Long Island Sound to the City of New Rochelle in Westchester County. The route then travels north and west through the Village of Pelham and north to the Village of Tuckahoe in the City of Yonkers, Westchester County, ending at a location adjacent to the Sprain Brook Substation with an HVDC converter station that will connect to the Sprain Brook Substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 5900kcmil Cu/XLPE/Pb/SWA cable	302,713	FT	\$ 212	\$ 400	\$ 250	\$ 64,175,148	\$ 121,085,184	\$ 75,678,240	\$ 260,938,572
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 15,321,404	\$ 10,214,269	\$ -	\$ 15,321,404	\$ 10,214,269	\$ 25,535,673
1.3	Submarine Cable Splicing if Required	-	EA				\$ -	\$ -	\$ -	\$ -
1.5	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.7	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.8	Fiber Optic Cable	151,356	FT	\$ 7			\$ 1,119,584	\$ -	\$ -	\$ 1,119,584
1.9	Ground Continuity Conductor	151,356	FT	\$ 13			\$ 1,973,537	\$ -	\$ -	\$ 1,973,537
1.10							\$ -	\$ -	\$ -	\$ -
1.11	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.12	HDD along Route	2,000	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 3,200,000	\$ 6,400,000	\$ 6,400,000	\$ 16,000,000
TOTAL - Submarine cable:							\$ 70,691,554	\$ 143,104,302	\$ 92,515,795	\$ 306,311,652
2. TRANSITION STATION										
2.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 5,400	\$ 3,600	\$ 9,000
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	500	LF	7.50	5.25	2.25	\$ 3,750	\$ 2,625	\$ 1,125	\$ 7,500
2.4	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.5	Splice Vault Excavation	796	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,938	\$ 5,973	\$ 19,911
2.6	Splice Vault Supply & Installation	2	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 140,000	\$ 45,000	\$ 105,000	\$ 290,000
2.7	Splice Vault Backfill	239	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,345	\$ 1,434	\$ 4,779
2.8	Air Test Ducts		LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.9	Restoration (incl. Paving)	3,500	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 49,000	\$ 49,000	\$ 24,500	\$ 122,500
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)		EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)		EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)		EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill		CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.15	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	796	CF		\$ 1.0	\$ 0.5	\$ -	\$ 796	\$ 398	\$ 1,195
2.20							\$ -	\$ -	\$ -	\$ -
2.21							\$ -	\$ -	\$ -	\$ -
TOTAL - MARINE CABLE :							\$ 192,750	\$ 216,262	\$ 244,267	\$ 653,280

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit							\$ 70,884,304	\$ 143,320,565	\$ 92,760,062	\$ 306,964,932
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
2.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
2.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,069,649.32		\$ -	\$ 3,069,649	\$ -	\$ 3,069,649
2.3	Construction Project Management / Supervision	1	LS		12,278,597.27		\$ -	\$ 12,278,597	\$ -	\$ 12,278,597
2.4	Utility PM and Project Oversight	1	LS		3,069,649.32		\$ -	\$ 3,069,649	\$ -	\$ 3,069,649
2.5	Site Accommodation, Facilities, Storage	1	LS	3,069,649.32			\$ 3,069,649	\$ -	\$ -	\$ 3,069,649
	Engineering									
2.6	Design Engineering	1	LS		\$ 15,348,247		\$ -	\$ 15,348,247	\$ -	\$ 15,348,247
2.7	Surveying/Staking	1	LS		\$ 2,148,755		\$ -	\$ 2,148,755	\$ -	\$ 2,148,755
	Testing & Commissioning / Inspection									
2.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
2.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
2.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,069,649		\$ -	\$ 3,069,649	\$ -	\$ 3,069,649
2.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
2.12	Warranties / LOC's	1	LS		\$ 920,895		\$ -	\$ 920,895	\$ -	\$ 920,895
2.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
2.14	Real Estate (Acquisition)	1	LS			\$ 34,467	\$ -	\$ -	\$ 34,467	\$ 34,467
2.15	Legal Fees (Real estate)	1.00	LS		-	1,034.01	\$ -	\$ -	\$ 1,034	\$ 1,034
2.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
2.17	Bonds	1	LS			\$ 10,700,000	\$ -	\$ -	\$ 10,700,000	\$ 10,700,000
2.18	Sales Tax on Materials	8.8%		\$ 70,884,304			\$ 6,237,819	\$ -	\$ -	\$ 6,237,819
2.19	Contractor Permits	1	LS		\$ 306,965		\$ -	\$ 306,965	\$ -	\$ 306,965
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,307,468	\$ 45,172,406	\$ 16,735,501	\$ 71,215,375

Propel NY - TO53 AS7

AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit

Total: \$ 269,097,723

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,157,696	\$ 10,524,458	\$ 4,261,238	\$ 16,943,392
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 16,394,321	\$ 24,273,941	\$ 19,177,460	\$ 59,845,721
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 38,098,278	\$ 22,571,696	\$ 14,717,706	\$ 75,387,680
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,552,314	\$ 23,084,641	\$ 8,227,017	\$ 37,863,972
SUBTOTAL (Costs):	\$ 63,202,608	\$ 80,454,735	\$ 46,383,421	\$ 190,040,765
CONTRACTOR MARK-UP (OH&P)	\$ 11,376,470	\$ 14,481,852	\$ 8,349,016	\$ 34,207,338
SUBTOTAL:	\$ 74,579,078	\$ 94,936,588	\$ 54,732,437	\$ 224,248,103
CONTINGENCY ON ENTIRE PROJECT	\$ 14,915,816	\$ 18,987,318	\$ 10,946,487	\$ 44,849,621
TOTAL:	\$ 89,494,893	\$ 113,923,905	\$ 65,678,925	\$ 269,097,723

Description of Work: 320 kV HVDC line will initiate at an HVDC converter station located adjacent to the Northport Generation facility and interconnect with the Northport substation via a new 345kV ring bus substation and three 345/138 autotransformers. The HVDC line will extend from Northport in the Hamlet of For Salonga in Suffolk County to the Sprain Brook Substation in Westchester County. The proposed route will be approximately 34.1 miles, utilizing marine 5900kcmil Cu/XLPE/Pb/SWA cable and terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable. Please see the Design Basis Manual, Attachment B.1.1, for more details. The proposed route connects through two counties, two cities, and two villages.

Beginning at a point in the Hamlet of Fort Salonga in Suffolk County, the proposed route travels through the Long Island Sound to the City of New Rochelle in Westchester County. The route then travels north and west through the Village of Pelham and north to the Village of Tuckahoe in the City of Yonkers, Westchester County, ending at a location adjacent to the Sprain Brook Substation with an HVDC converter station that will connect to the Sprain Brook Substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	8.94	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 6,258,000	\$ 2,682,000	\$ 8,940,000
1.3	Flaggers	240	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 384,000	\$ 1,152,000	\$ 384,000	\$ 1,920,000
1.4	K Rail / Lane Control / Metal Plates	47,203	LF	\$ 30	\$ 18	\$ 12	\$ 1,416,096	\$ 849,658	\$ 566,438	\$ 2,832,192
1.5	Police Support	9,600.0	HR		\$ 120	\$ 27	\$ -	\$ 1,152,000	\$ 259,200	\$ 1,411,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.94	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 357,600	\$ 1,072,800	\$ 357,600	\$ 1,788,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,157,696	\$ 10,524,458	\$ 4,261,238	\$ 16,943,392
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	9	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,249,812	\$ 833,208	\$ 2,083,020
2.2	Formwork in Trench	337,882	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 675,763	\$ 506,822	\$ 168,941	\$ 1,351,526
2.3	Trench Excavation	21,249	CY		\$ 17.5	\$ 7.5	\$ -	\$ 371,857	\$ 159,367	\$ 531,225
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,213	CY	\$ 50	\$ 25	\$ 14	\$ 110,672	\$ 54,229	\$ 30,988	\$ 195,889
2.5	Supply & Install Thermal Backfill	23,241	CY	\$ 350	\$ 245	\$ 105	\$ 8,134,382	\$ 5,694,068	\$ 2,440,315	\$ 16,268,764
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Ductbank Concrete	5,256	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,051,187	\$ 656,992	\$ 262,797	\$ 1,970,976
2.8	Conduit 8" HDPE SDR21	94,406	LF	\$ 9.7	\$ 5.7	\$ 2.4	\$ 912,910	\$ 535,284	\$ 229,408	\$ 1,677,602
2.9	Conduit 4" HDPE SDR21	47,203	LF	\$ 2.6	\$ 4.20	\$ 1.8	\$ 124,616	\$ 198,253	\$ 84,966	\$ 407,836
2.10	Conduit 2" HDPE SDR21	47,203	LF	\$ 0.9	\$ 3.15	\$ 1.4	\$ 40,595	\$ 148,690	\$ 63,724	\$ 253,009
2.11	Warning Tape	94,406	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,161	\$ 23,602	\$ 9,441	\$ 47,203
2.12	Trench Box Shoring (Vault)	42	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 759,322	\$ 1,138,983	\$ 1,898,305
2.13	Splice Vault Excavation	8,190	CY		\$ 17.5	\$ 7.5	\$ -	\$ 143,325	\$ 61,425	\$ 204,750
2.14	Splice Vault Supply & Installation	42	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,470,000	\$ 693,000	\$ 1,617,000	\$ 3,780,000
2.15	Splice Vault Backfill	2,457	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,398	\$ 14,742	\$ 49,140
2.16	Jack and Bore along Route	2,100	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,680,000	\$ 3,360,000	\$ 3,360,000	\$ 8,400,000
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Microtunnel (MTBM)	1,398	LF	\$ 1,260	\$ 2,205	\$ 2,835	\$ 1,761,480	\$ 3,082,590	\$ 3,963,330	\$ 8,807,400

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	188,813	LF			\$ 0.25	\$ -	\$ -	\$ 47,203	\$ 47,203
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	20,703	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 289,848	\$ 289,848	\$ 144,924	\$ 724,620
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,751	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 128,706	\$ 135,142	\$ 57,918	\$ 321,766
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	285	EA		\$ 400	\$ 1,200	\$ -	\$ 113,988	\$ 341,964	\$ 455,952
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 732,186	\$ 488,124	\$ -	\$ 732,186	\$ 488,124	\$ 1,220,310
2.26	Excess Materials Disposal to Certified Backfill	28,244	CY		\$ 24.5	\$ 10.5	\$ -	\$ 691,975	\$ 296,561	\$ 988,536
2.27	Rock Excavation and Removal	19,626	CY		\$ 243	\$ 162	\$ -	\$ 4,769,118	\$ 3,179,412	\$ 7,948,530
2.28	Dewatering	42	EA			\$ 4,000	\$ -	\$ -	\$ 168,000	\$ 168,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	29,439	CF		\$ 1.0	\$ 0.5	\$ -	\$ 29,439	\$ 14,719	\$ 44,158
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 16,394,321	\$ 24,273,941	\$ 19,177,460	\$ 59,845,721
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable	99,127	FT	\$ 347	\$ 208	\$ 139	\$ 34,396,972	\$ 20,638,183	\$ 13,758,789	\$ 68,793,944
3.2	Circuit #1- Cable Splicing- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable	84	EA	\$ 19,349	\$ 9,846.5	\$ 2,813	\$ 1,625,316	\$ 827,104	\$ 236,316	\$ 2,688,736
3.3	Circuit #1- Cable Termination- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable	4	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 181,640	\$ 39,386	\$ 11,253	\$ 232,279
3.4	Circuit #2- Procurement & Installation- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	42	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 881,473	\$ 528,884	\$ 352,589	\$ 1,762,946
3.11	Fiber Optic Cable	49,563	FT	\$ 7	\$ 3	\$ 2	\$ 366,620	\$ 165,076	\$ 110,050	\$ 641,746
3.12	Ground Continuity Conductor	49,563	FT	\$ 13	\$ 8	\$ 5	\$ 646,257	\$ 373,063	\$ 248,709	\$ 1,268,029
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 38,098,278	\$ 22,571,696	\$ 14,717,706	\$ 75,387,680
AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit							\$ 56,650,294	\$ 57,370,094	\$ 38,156,404	\$ 152,176,793
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,865,795	\$ 1,910,530	\$ -	\$ 2,865,795	\$ 1,910,530	\$ 4,776,325
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,521,767.93		\$ -	\$ 1,521,768	\$ -	\$ 1,521,768
4.3	Construction Project Management / Supervision	1	LS		6,087,071.71		\$ -	\$ 6,087,072	\$ -	\$ 6,087,072
4.4	Utility PM and Project Oversight	1	LS		1,521,767.93		\$ -	\$ 1,521,768	\$ -	\$ 1,521,768
4.5	Site Accommodation, Facilities, Storage	1	LS	1,521,767.93			\$ 1,521,768	\$ -	\$ -	\$ 1,521,768
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 7,608,840	\$ -	\$ -	\$ 7,608,840	\$ -	\$ 7,608,840
4.7	LiDAR /GPR	1.0	LS		\$ 273,918	\$ 182,612	\$ -	\$ 273,918	\$ 182,612	\$ 456,530
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 639,143		\$ -	\$ 639,143	\$ -	\$ 639,143
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 1,521,768		\$ -	\$ 1,521,768	\$ -	\$ 1,521,768
4.12	Environmental-special studies/investigation		LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 456,530	\$ -	\$ -	\$ 456,530	\$ 456,530
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 125,037	\$ -	\$ -	\$ 125,037	\$ 125,037
4.16	Legal Fees (Real estate)	1.00	LS		-	3,751.11	\$ -	\$ -	\$ 3,751	\$ 3,751
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 5,380,000	\$ -	\$ -	\$ 5,380,000	\$ 5,380,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 56,650,294			\$ 5,030,546	\$ -	\$ -	\$ 5,030,546
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 152,177	\$ -	\$ -	\$ 152,177	\$ 152,177
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,552,314	\$ 23,084,641	\$ 8,227,017	\$ 37,863,972

Propel NY - TO53 AS7

AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)

Total: \$20,326,067

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 278,400	\$ 1,065,040	\$ 393,360	\$ 1,736,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 1,441,209	\$ 1,516,850	\$ 1,073,140	\$ 4,031,200
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 2,559,647	\$ 1,718,920	\$ 1,033,415	\$ 5,311,982
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 490,798	\$ 2,207,093	\$ 576,694	\$ 3,274,585
SUBTOTAL (Costs):	\$ 4,770,054	\$ 6,507,903	\$ 3,076,610	\$ 14,354,567
CONTRACTOR MARK-UP (OH&P)	\$ 858,610	\$ 1,171,423	\$ 553,790	\$ 2,583,822
SUBTOTAL:	\$ 5,628,664	\$ 7,679,326	\$ 3,630,400	\$ 16,938,390
CONTINGENCY ON ENTIRE PROJECT	\$ 1,125,733	\$ 1,535,865	\$ 726,080	\$ 3,387,678
TOTAL:	\$ 6,754,397	\$ 9,215,191	\$ 4,356,480	\$ 20,326,067

Description of Work: The 901 circuit from the point of interception will require an approximate 0.5 double circuit 138 kV construction utilizing 4000kcmil XLPE cable. At the point of intercept for the portion of the 901 cable going to Jamaica an oil stop transition joint will be utilized. Due to the fact that the portion of the 901 cable towards Valley Stream will be limiting it is proposed that that 6 mile portion of the cable will be upgraded using 4000kcmil XLPE cable.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.50	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 350,000	\$ 150,000	\$ 500,000
1.3	Flaggers	50	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 80,000	\$ 240,000	\$ 80,000	\$ 400,000
1.4	K Rail / Lane Control / Metal Plates	5,280	LF	\$ 30	\$ 18	\$ 12	\$ 158,400	\$ 95,040	\$ 63,360	\$ 316,800
1.5	Police Support	2,000.0	HR		\$ 120	\$ 27	\$ -	\$ 240,000	\$ 54,000	\$ 294,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	20.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 20,000	\$ 6,000	\$ 26,000
1.9	Existing Utility Protection	1.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 40,000	\$ 120,000	\$ 40,000	\$ 200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 278,400	\$ 1,065,040	\$ 393,360	\$ 1,736,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 139,800	\$ 93,200	\$ -	\$ 139,800	\$ 93,200	\$ 233,000
2.2	Formwork in Trench	42,240	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 84,480	\$ 63,360	\$ 21,120	\$ 168,960
2.3	Trench Excavation	3,162	CY		\$ 17.5	\$ 7.5	\$ -	\$ 55,328	\$ 23,712	\$ 79,040
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	198	CY	\$ 50	\$ 25	\$ 14	\$ 9,880	\$ 4,841	\$ 2,766	\$ 17,488
2.5	Supply & Install Thermal Backfill	1,748	CY	\$ 350	\$ 245	\$ 105	\$ 611,800	\$ 428,260	\$ 183,540	\$ 1,223,600
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	688	CY	\$ 200	\$ 125	\$ 50	\$ 137,560	\$ 85,975	\$ 34,390	\$ 257,925
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 6" HDPE	15,840	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 167,904	\$ 89,813	\$ 38,491	\$ 296,208
2.10	Conduit 4" HDPE	5,280	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 28,354	\$ 22,176	\$ 9,504	\$ 60,034
2.11	Conduit 2" HDPE	5,280	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 10,085	\$ 16,632	\$ 7,128	\$ 33,845
2.12	Warning Tape	5,280	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 792	\$ 1,320	\$ 528	\$ 2,640
2.13	Trench Box Shoring (Vault)	6	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 108,475	\$ 162,712	\$ 271,186
2.14	Splice Vault Excavation	1,089	CY		\$ 17.5	\$ 7.5	\$ -	\$ 19,059	\$ 8,168	\$ 27,228
2.15	Splice Vault Supply & Installation	6	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 210,000	\$ 99,000	\$ 231,000	\$ 540,000
2.16	Splice Vault Backfill	327	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,574	\$ 1,960	\$ 6,535
2.17	Jack and Bore along Route	0	LF	\$ 600	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	26,400	LF			\$ 0.25	\$ -	\$ -	\$ 6,600	\$ 6,600
2.20	Restoration (incl. Paving)	12,882	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 180,355	\$ 180,355	\$ 90,177	\$ 450,887
2.21	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,992	\$ 20,976	\$ 27,968
2.22	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	7	EA		\$ 10	\$ 15	\$ -	\$ 69	\$ 103	\$ 172
2.23	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,992	\$ 20,976	\$ 27,968
2.24	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	2	LS		\$ 27,300	\$ 18,200	\$ -	\$ 54,600	\$ 36,400	\$ 91,000
2.25	Excess Materials Disposal to Certified Backfill	5,101	CY		\$ 24.5	\$ 10.5	\$ -	\$ 124,979	\$ 53,562	\$ 178,541
2.26	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.27	Dewatering	6	EA			\$ 4,000	\$ -	\$ -	\$ 24,000	\$ 24,000
2.28	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Excavated material - stockpile management	4,251	CF		\$ 1.0	\$ 0.5	\$ -	\$ 4,251	\$ 2,125	\$ 6,376
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 1,441,209	\$ 1,516,850	\$ 1,073,140	\$ 4,031,200
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	8,316	FT	\$ 127	\$ 76	\$ 51	\$ 1,056,132	\$ 633,679	\$ 422,453	\$ 2,112,264
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	9	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 53,082	\$ 88,618	\$ 25,320	\$ 167,020
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	8,316	FT	\$ 127	\$ 76	\$ 51	\$ 1,056,132	\$ 633,679	\$ 422,453	\$ 2,112,264
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	9	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 53,082	\$ 88,618	\$ 25,320	\$ 167,020
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT	\$ 127	\$ 76	\$ 51	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	6	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 159,954	\$ 95,972	\$ 63,982	\$ 319,908
3.11	Fiber Optic Cable	5,544	FT	\$ 7	\$ 3	\$ 2	\$ 41,009	\$ 18,465	\$ 12,310	\$ 71,784
3.12	Ground Continuity Conductor	5,544	FT	\$ 13	\$ 8	\$ 5	\$ 72,288	\$ 41,730	\$ 27,820	\$ 141,838
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 2,559,647	\$ 1,718,920	\$ 1,033,415	\$ 5,311,982
AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)							\$ 4,279,256	\$ 4,300,810	\$ 2,499,916	\$ 11,079,982
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 204,022	\$ 136,015	\$ -	\$ 204,022	\$ 136,015	\$ 340,036
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		110,799.82		\$ -	\$ 110,800	\$ -	\$ 110,800
4.3	Construction Project Management / Supervision	1	LS		443,199.28		\$ -	\$ 443,199	\$ -	\$ 443,199
4.4	Utility PM and Project Oversight	1	LS		110,799.82		\$ -	\$ 110,800	\$ -	\$ 110,800
4.5	Site Accommodation, Facilities, Storage	1	LS	110,799.82			\$ 110,800	\$ -	\$ -	\$ 110,800
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 553,999	\$ -	\$ -	\$ 553,999	\$ -	\$ 553,999
4.7	LiDAR /GPR	1.0	LS		\$ 19,944	\$ 13,296	\$ -	\$ 19,944	\$ 13,296	\$ 33,240
4.8	Geotech	1.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 77,560		\$ -	\$ 77,560	\$ -	\$ 77,560
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 110,800		\$ -	\$ 110,800	\$ -	\$ 110,800
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 33,240		\$ -	\$ 33,240	\$ -	\$ 33,240
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 14,062	\$ -	\$ -	\$ 14,062	\$ 14,062
4.16	Legal Fees (Real estate)	1.00	LS		-	421.86	\$ -	\$ -	\$ 422	\$ 422
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 400,000	\$ -	\$ -	\$ 400,000	\$ 400,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 4,279,256.30			\$ 379,998	\$ -	\$ -	\$ 379,998
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 11,080	\$ -	\$ -	\$ 11,080	\$ 11,080
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 490,798	\$ 2,207,093	\$ 576,694	\$ 3,274,585

Propel NY - TO53 AS7

AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)

Total: \$ 72,122,497

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 1,049,600	\$ 3,836,160	\$ 1,454,240	\$ 6,340,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 5,407,501	\$ 5,629,339	\$ 3,555,215	\$ 14,592,055
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 9,591,155	\$ 6,065,857	\$ 3,841,349	\$ 19,498,361
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,829,389	\$ 6,605,654	\$ 2,068,508	\$ 10,503,551
SUBTOTAL (Costs):	\$ 17,877,645	\$ 22,137,010	\$ 10,919,312	\$ 50,933,967
CONTRACTOR MARK-UP (OH&P)	\$ 3,217,976	\$ 3,984,662	\$ 1,965,476	\$ 9,168,114
SUBTOTAL:	\$ 21,095,621	\$ 26,121,672	\$ 12,884,788	\$ 60,102,081
CONTINGENCY ON ENTIRE PROJECT	\$ 4,219,124	\$ 5,224,334	\$ 2,576,958	\$ 12,020,416
TOTAL:	\$ 25,314,746	\$ 31,346,006	\$ 15,461,746	\$ 72,122,497

Description of Work: The 903 circuit from the point of interception will require an approximate 2.5 mile double circuit 138 kV construction utilizing 4000kcmil XLPE cable. At the point of interception oil stop transition joints are proposed to connect to the existing cables.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,400,000	\$ 600,000	\$ 2,000,000
1.3	Flaggers	160	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 256,000	\$ 768,000	\$ 256,000	\$ 1,280,000
1.4	K Rail / Lane Control / Metal Plates	21,120	LF	\$ 30	\$ 18	\$ 12	\$ 633,600	\$ 380,160	\$ 253,440	\$ 1,267,200
1.5	Police Support	6,400.0	HR		\$ 120	\$ 27	\$ -	\$ 768,000	\$ 172,800	\$ 940,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	4.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 160,000	\$ 480,000	\$ 160,000	\$ 800,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 1,049,600	\$ 3,836,160	\$ 1,454,240	\$ 6,340,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		Trench length less HDD, J&B, Conduit	20,770.00	(Two trenches)						
2.1	Trench Box Shoring & Trench Box Install Crew	4	LS		\$ 139,800	\$ 93,200	\$ -	\$ 559,200	\$ 372,800	\$ 932,000
2.2	Formwork in Trench	168,960	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 337,920	\$ 253,440	\$ 84,480	\$ 675,840
2.3	Trench Excavation	12,800	CY		\$ 17.5	\$ 7.5	\$ -	\$ 224,008	\$ 96,004	\$ 320,012
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	800	CY	\$ 50	\$ 25	\$ 14	\$ 40,001	\$ 19,601	\$ 11,200	\$ 70,803
2.5	Supply & Install Thermal Backfill	7,077	CY	\$ 350	\$ 245	\$ 105	\$ 2,477,015	\$ 1,733,910	\$ 743,104	\$ 4,954,030
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	2,785	CY	\$ 200	\$ 125	\$ 50	\$ 556,944	\$ 348,090	\$ 139,236	\$ 1,044,269
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 6" HDPE	63,360	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 671,616	\$ 359,251	\$ 153,965	\$ 1,184,832
2.10	Conduit 4" HDPE	21,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 113,414	\$ 88,704	\$ 38,016	\$ 240,134
2.11	Conduit 2" HDPE	21,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 40,339	\$ 66,528	\$ 28,512	\$ 135,379
2.12	Warning Tape	21,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 3,168	\$ 5,280	\$ 2,112	\$ 10,560
2.13	Trench Box Shoring (Vault)	14	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 253,107	\$ 379,661	\$ 632,768
2.14	Splice Vault Excavation	2,541	CY		\$ 17.5	\$ 7.5	\$ -	\$ 44,472	\$ 19,059	\$ 63,531
2.15	Splice Vault Supply & Installation	14	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 490,000	\$ 231,000	\$ 539,000	\$ 1,260,000
2.16	Splice Vault Backfill	762	CY		\$ 14.0	\$ 6.0	\$ -	\$ 10,673	\$ 4,574	\$ 15,248
2.17	Jack and Bore along Route	0	LF	\$ 600	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	105,600	LF			\$ 0.25	\$ -	\$ -	\$ 26,400	\$ 26,400
2.20	Restoration (incl. Paving)	48,363	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 677,084	\$ 677,084	\$ 338,542	\$ 1,692,709
2.21	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,309	\$ 84,926	\$ 113,235
2.22	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	28	EA		\$ 10	\$ 15	\$ -	\$ 278	\$ 418	\$ 696
2.23	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,309	\$ 84,926	\$ 113,235
2.24	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	2	LS		\$ 109,200	\$ 72,800	\$ -	\$ 218,400	\$ 145,600	\$ 364,000
2.25	Excess Materials Disposal to Certified Backfill	18,953	CY		\$ 24.5	\$ 10.5	\$ -	\$ 464,352	\$ 199,008	\$ 663,361
2.26	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.27	Dewatering	14	EA			\$ 4,000	\$ -	\$ -	\$ 56,000	\$ 56,000
2.28	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Excavated material - stockpile management	15,342	CF		\$ 1.0	\$ 0.5	\$ -	\$ 15,342	\$ 7,671	\$ 23,013
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 5,407,501	\$ 5,629,339	\$ 3,555,215	\$ 14,592,055
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	33,264	FT	\$ 127	\$ 76	\$ 51	\$ 4,224,528	\$ 2,534,717	\$ 1,689,811	\$ 8,449,056
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	21	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 123,858	\$ 206,776	\$ 59,079	\$ 389,713
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	33,264	FT	\$ 127	\$ 76	\$ 51	\$ 4,224,528	\$ 2,534,717	\$ 1,689,811	\$ 8,449,056
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	21	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 123,858	\$ 206,776	\$ 59,079	\$ 389,713
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT	\$ 127	\$ 76	\$ 51	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	14	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 373,226	\$ 223,936	\$ 149,290	\$ 746,452
3.11	Fiber Optic Cable	22,176	FT	\$ 7	\$ 3	\$ 2	\$ 164,036	\$ 73,859	\$ 49,240	\$ 287,135
3.12	Ground Continuity Conductor	22,176	FT	\$ 13	\$ 8	\$ 5	\$ 289,153	\$ 166,919	\$ 111,279	\$ 567,351
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 9,591,155	\$ 6,065,857	\$ 3,841,349	\$ 19,498,361
AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)							\$ 16,048,256	\$ 15,531,356	\$ 8,850,804	\$ 40,430,416
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 731,465	\$ 487,643	\$ -	\$ 731,465	\$ 487,643	\$ 1,219,108
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		404,304.16		\$ -	\$ 404,304	\$ -	\$ 404,304
4.3	Construction Project Management / Supervision	1	LS		1,617,216.63		\$ -	\$ 1,617,217	\$ -	\$ 1,617,217
4.4	Utility PM and Project Oversight	1	LS		404,304.16		\$ -	\$ 404,304	\$ -	\$ 404,304
4.5	Site Accommodation, Facilities, Storage	1	LS	404,304.16			\$ 404,304	\$ -	\$ -	\$ 404,304
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 2,021,521	\$ -	\$ -	\$ 2,021,521	\$ -	\$ 2,021,521
4.7	LiDAR /GPR	1.0	LS		\$ 72,775	\$ 48,516	\$ -	\$ 72,775	\$ 48,516	\$ 121,291
4.8	Geotech	2.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 283,013		\$ -	\$ 283,013	\$ -	\$ 283,013
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ 40,000		\$ -	\$ 40,000	\$ -	\$ 40,000
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 404,304		\$ -	\$ 404,304	\$ -	\$ 404,304
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 121,291		\$ -	\$ 121,291	\$ -	\$ 121,291
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 46,872	\$ -	\$ -	\$ 46,872	\$ 46,872
4.16	Legal Fees (Real estate)	1.00	LS		-	1,406.16	\$ -	\$ -	\$ 1,406	\$ 1,406
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,440,000	\$ -	\$ -	\$ 1,440,000	\$ 1,440,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 16,048,256.02			\$ 1,425,085	\$ -	\$ -	\$ 1,425,085
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 40,430	\$ -	\$ -	\$ 40,430	\$ 40,430
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,829,389	\$ 6,605,654	\$ 2,068,508	\$ 10,503,551

Propel NY - TO53 AS7

AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit

Total: \$ 113,699,531

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 1,510,400	\$ 7,470,240	\$ 2,974,160	\$ 11,954,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 8,370,529	\$ 9,040,981	\$ 6,123,677	\$ 23,535,186
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 14,026,459	\$ 8,578,169	\$ 5,594,995	\$ 28,199,623
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,759,872	\$ 10,604,137	\$ 3,242,660	\$ 16,606,670
SUBTOTAL (Costs):	\$ 26,667,260	\$ 35,693,527	\$ 17,935,492	\$ 80,296,279
CONTRACTOR MARK-UP (OH&P)	\$ 4,800,107	\$ 6,424,835	\$ 3,228,389	\$ 14,453,330
SUBTOTAL:	\$ 31,467,367	\$ 42,118,362	\$ 21,163,880	\$ 94,749,609
CONTINGENCY ON ENTIRE PROJECT	\$ 6,293,473	\$ 8,423,672	\$ 4,232,776	\$ 18,949,922
TOTAL:	\$ 37,760,840	\$ 50,542,034	\$ 25,396,657	\$ 113,699,531

Description of Work: . It is currently anticipated that a similar route from the point of intercept to Valley Stream Substation would be utilized and would interconnect at the location of the existing 901 circuit. The portion of the existing 901 cable from the point of intercept to the Valley Stream Substation would likely be retired.										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	6.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,200,000	\$ 1,800,000	\$ 6,000,000
1.3	Flaggers	200	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 320,000	\$ 960,000	\$ 320,000	\$ 1,600,000
1.4	K Rail / Lane Control / Metal Plates	31,680	LF	\$ 30	\$ 18	\$ 12	\$ 950,400	\$ 570,240	\$ 380,160	\$ 1,900,800
1.5	Police Support	8,000.0	HR		\$ 120	\$ 27	\$ -	\$ 960,000	\$ 216,000	\$ 1,176,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	6.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 240,000	\$ 720,000	\$ 240,000	\$ 1,200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 1,510,400	\$ 7,470,240	\$ 2,974,160	\$ 11,954,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		Trench length less HDD, J&B, Conduit	30,858.00							
2.1	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 838,800	\$ 559,200	\$ -	\$ 838,800	\$ 559,200	\$ 1,398,000
2.2	Formwork in Trench	245,816	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 491,632	\$ 368,724	\$ 122,908	\$ 983,264
2.3	Trench Excavation	18,937	CY		\$ 17.5	\$ 7.5	\$ -	\$ 331,396	\$ 142,027	\$ 473,423
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,184	CY	\$ 50	\$ 25	\$ 14	\$ 59,178	\$ 28,997	\$ 16,570	\$ 104,745
2.5	Supply & Install Thermal Backfill	10,470	CY	\$ 350	\$ 245	\$ 105	\$ 3,664,479	\$ 2,565,135	\$ 1,099,344	\$ 7,328,959
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	4,120	CY	\$ 200	\$ 125	\$ 50	\$ 823,939	\$ 514,962	\$ 205,985	\$ 1,544,885
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 6" HDPE	95,040	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,007,424	\$ 538,877	\$ 230,947	\$ 1,777,248
2.10	Conduit 4" HDPE	31,680	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 170,122	\$ 133,056	\$ 57,024	\$ 360,202
2.11	Conduit 2" HDPE	31,680	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 60,509	\$ 99,792	\$ 42,768	\$ 203,069
2.12	Warning Tape	31,680	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 4,752	\$ 7,920	\$ 3,168	\$ 15,840
2.13	Trench Box Shoring (Vault)	18	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 325,424	\$ 488,136	\$ 813,559
2.14	Splice Vault Excavation	3,267	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,178	\$ 24,505	\$ 81,683
2.15	Splice Vault Supply & Installation	18	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 630,000	\$ 297,000	\$ 693,000	\$ 1,620,000
2.16	Splice Vault Backfill	980	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,723	\$ 5,881	\$ 19,604
2.17	Jack and Bore along Route	0	LF	\$ 600	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Microtunnel (MTBM)	372	LF	\$ 1,260	\$ 2,205	\$ 2,835	\$ 468,720	\$ 820,260	\$ 1,054,620	\$ 2,343,600
2.20	Air Test Ducts	158,400	LF			\$ 0.25	\$ -	\$ -	\$ 39,600	\$ 39,600
2.21	Restoration (incl. Paving)	70,698	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 989,774	\$ 989,774	\$ 494,887	\$ 2,474,436
2.22	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	105	EA		\$ 400	\$ 1,200	\$ -	\$ 41,880	\$ 125,639	\$ 167,519
2.23	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	41	EA		\$ 10	\$ 15	\$ -	\$ 412	\$ 618	\$ 1,030

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	105	EA		\$ 400	\$ 1,200	\$ -	\$ 41,880	\$ 125,639	\$ 167,519
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 327,600	\$ 218,400	\$ -	\$ 327,600	\$ 218,400	\$ 546,000
2.26	Excess Materials Disposal to Certified Backfill	27,591	CY		\$ 24.5	\$ 10.5	\$ -	\$ 675,987	\$ 289,709	\$ 965,695
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	18	EA			\$ 4,000	\$ -	\$ -	\$ 72,000	\$ 72,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	22,204	CF		\$ 1.0	\$ 0.5	\$ -	\$ 22,204	\$ 11,102	\$ 33,306
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 8,370,529	\$ 9,040,981	\$ 6,123,677	\$ 23,535,186
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	99,792	FT	\$ 127	\$ 76	\$ 51	\$ 12,673,584	\$ 7,604,150	\$ 5,069,434	\$ 25,347,168
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	27	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 159,246	\$ 265,855	\$ 75,959	\$ 501,060
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	-	FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	-	EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	-	EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	18	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 479,862	\$ 287,917	\$ 191,945	\$ 959,724
3.11	Fiber Optic Cable	33,264	FT	\$ 7	\$ 3	\$ 2	\$ 246,054	\$ 110,789	\$ 73,859	\$ 430,702
3.12	Ground Continuity Conductor	33,264	FT	\$ 13	\$ 8	\$ 5	\$ 433,729	\$ 250,378	\$ 166,919	\$ 851,026
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 14,026,459	\$ 8,578,169	\$ 5,594,995	\$ 28,199,623
AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit							\$ 23,907,388	\$ 25,089,390	\$ 14,692,831	\$ 63,689,609
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,193,467	\$ 795,644	\$ -	\$ 1,193,467	\$ 795,644	\$ 1,989,111
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		636,896.09		\$ -	\$ 636,896	\$ -	\$ 636,896
4.3	Construction Project Management / Supervision	1	LS		2,547,584.36		\$ -	\$ 2,547,584	\$ -	\$ 2,547,584
4.4	Utility PM and Project Oversight	1	LS		636,896.09		\$ -	\$ 636,896	\$ -	\$ 636,896
4.5	Site Accommodation, Facilities, Storage	1	LS	636,896.09			\$ 636,896	\$ -	\$ -	\$ 636,896
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,184,480	\$ -	\$ -	\$ 3,184,480	\$ -	\$ 3,184,480
4.7	LiDAR /GPR	1.0	LS		\$ 114,641	\$ 76,428	\$ -	\$ 114,641	\$ 76,428	\$ 191,069
4.8	Geotech	6.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 16,380	\$ 10,920	\$ 27,300
4.9	Surveying/Staking	1	LS		\$ 445,827		\$ -	\$ 445,827	\$ -	\$ 445,827
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 636,896		\$ -	\$ 636,896	\$ -	\$ 636,896
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 191,069		\$ -	\$ 191,069	\$ -	\$ 191,069
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 34,931	\$ -	\$ -	\$ 34,931	\$ 34,931
4.16	Legal Fees (Real estate)	1.00	LS		-	1,047.93	\$ -	\$ -	\$ 1,048	\$ 1,048
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,260,000	\$ -	\$ -	\$ 2,260,000	\$ 2,260,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 23,907,387.74			\$ 2,122,976	\$ -	\$ -	\$ 2,122,976
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 63,690	\$ -	\$ -	\$ 63,690	\$ 63,690
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,759,872	\$ 10,604,137	\$ 3,242,660	\$ 16,606,670

Other Misc. Upgrades

Total: \$ 15,301,296

Other Misc. Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Misc. Upgrades				
1. Lake Success-Jamaica Cooling Upgrade	\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 437,200	\$ 1,743,800	\$ 425,000	\$ 2,606,000
CONTRACTOR MARK-UP (OH&P)	\$ 798,696	\$ 731,484	\$ 414,900	\$ 1,945,080
SUBTOTAL:	\$ 5,235,896	\$ 4,795,284	\$ 2,719,900	\$ 12,751,080
CONTINGENCY ON ENTIRE PROJECT	\$ 1,047,179	\$ 959,057	\$ 543,980	\$ 2,550,216
TOTAL:	\$ 6,283,075	\$ 5,754,341	\$ 3,263,880	\$ 15,301,296

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
Other Misc. Upgrades										
1. Lake Success-Jamaica Cooling Upgrade										
1.1	Cooling upgrade	1	LS	4,000,000.00	2,320,000.00	1,880,000.00	\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
1.2							\$ -	\$ -	\$ -	\$ -
1.3							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
2.1	138kV Line Upgrade									
							\$ -	\$ -	\$ -	\$ -
TOTAL - :										
3.1	138kV Line Upgrade									
							\$ -	\$ -	\$ -	\$ -
TOTAL - :										
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,000,000.00	\$ 2,320,000.00	\$ 1,880,000.00	\$ 8,200,000.00
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
4.1	Mob / Demob	1.0	LS		\$ 126,000	\$ 84,000	\$ -	\$ 126,000	\$ 84,000	\$ 210,000
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,000.00		\$ -	\$ 82,000	\$ -	\$ 82,000
4.3	Construction Project Management / Supervision	1	LS		328,000.00		\$ -	\$ 328,000	\$ -	\$ 328,000
4.4	Utility PM and Project Oversight	1	LS		82,000.00		\$ -	\$ 82,000	\$ -	\$ 82,000
4.5	Site Accommodation, Facilities, Storage	1	LS	82,000.00			\$ 82,000	\$ -	\$ -	\$ 82,000
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 410,000	\$ -	\$ -	\$ 410,000	\$ -	\$ 410,000
4.7	LiDAR	1.00	LS		\$ 14,760	\$ 9,840	\$ -	\$ 14,760	\$ 9,840	\$ 24,600
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,440	\$ 22,960	\$ -	\$ 34,440	\$ 22,960	\$ 57,400
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,000		\$ -	\$ 82,000	\$ -	\$ 82,000
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,600		\$ -	\$ 24,600	\$ -	\$ 24,600
4.15	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,000,000.00			\$ 355,200	\$ -	\$ -	\$ 355,200
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,200	\$ -	\$ -	\$ 8,200	\$ 8,200
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 437,200	\$ 1,743,800	\$ 425,000	\$ 2,606,000

Propel NY - TO53 AS7	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO52 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately \$405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1_Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of \$20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversight is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of \$1M per mile has been included for relocation of existing utilities and \$200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	All Tline segments construction period is based on milestone schedule provided.
36	No schedule provided for 901 & 903 intercept, 901 EQ to VS 138kv UG, assume 2.5/10/13 months construction
37	901/903 intercept to Eastern Queens 138 kV lines, we assumed the transition splice vaults as regular vaults.
38	Shore Road to Sprainbrook 345kv UG line, Shore Road to New Rochelle is 2-circuit, New Rochelle to Sprainbrook is 1 -circuit.
39	The length from New Rochelle Landing to New Rochelle (0.86mi) was added to the developer length on AS 7.7b (NR landing - Sprainbrook 320kv DC). Assume the 320KV DC mh size same as 345kv.
40	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 1 circuits, 2 cable per circuit, so there are 2 passes.
41	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
42	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
43	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
44	Substation pad is based on 8" base and 6" surfacing rock.
45	The firewalls for transformers/PAR/Reactors are assumed 30' tall, if required
46	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
47	Each substation construction period is based on milestone schedule provided
48	Costs for precast concrete piles (12"x80') were included in several substations by developer, there are no drawings nor geo technical report to verify if it is required and the quantities. We assumed it is required and included the costs based on developer's quantities.
49	The control panels quantities and values are provided by Sub Station Engineers.
50	Assumes that GIS Tech Rep pricing will be included with GIS equipment supply price.

SUBSTATION ENGINEERING COMPANY



Long Island Offshore Wind Export Public Policy Transmission Need

Risk Assessment Register



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Long Island PPTN Project Risk Assessment Register

Date: 4/20/2023

Project:	All
Developer:	All
Project Name:	All

Item #	Risk Title	Description	Comments
Environmental and Permit Concerns			
E-1	Article VII Certificate	Article VII approval process could take longer than estimated in schedule for a variety of reasons (<i>i.e.</i> , additional special studies requested by involved agencies, lack of stakeholder consensus).	Developer needs early outreach with all stakeholders and to prepare a comprehensive application. Developer's experience with Article VII process will be essential.
E-2	Other environmental approvals	Federal agency and other approvals could take longer than the state Article VII process.	Developer needs early outreach with federal agencies and others to prepare comprehensive applications and obtain approvals in parallel with the Article VII process. Could take up to 5 months if Developer files for Evidentiary Hearing.
E-3	Public Opposition	If local groups or citizens oppose the project, it could cause significant delays especially if opposition results in litigation.	Developer needs early outreach to solicit public involvement, incorporate public concerns during planning stage before project execution, build mitigation into design, and foster community buy-in.
E-4	EM&CP Approval	EM&CP approval process could take longer than estimated by the Developer in schedule.	Developer needs to prepare a comprehensive EM&CP that will meet regulatory agency requirements. Developer's experience with DPS, DEC, Ag. & Markets, and other agency requirements will be essential.
E-5	Environmental Study Findings	Environmental studies could find critical habitat, wetlands, agricultural lands, rare, threatened or endangered species, cultural or archeological sites, etc. that could require re-routing of lines or special conditions, such as seasonal restriction on construction. The time of year when studies can be conducted could also affect project schedule.	Studies need to be scheduled and conducted early in the process to ensure design and the EM&CP adequately minimizes, mitigates, or avoids environmental impacts.
E-6	Construction Approval Restrictions- Long Island Sound Crossing	Time of year restrictions will likely be imposed. The Army Corps of Engineers will likely not allow work from Jan 1 – May 31 as a condition of their Nationwide Permit. Further, based on experience in Region 1 tidal waters, NYSDEC imposes a no-work window from Jan 1 – Sept 30. These combined restrictions would result in an allowable work window of Oct 1 – Dec 31.	
E-7	Environmental Study Findings- NYSDEC Wetland and Adjacent Areas- Barrett	The wetlands and/or the 300' Tidal Wetland Adjacent Area at Barrett Substation are likely unavoidable by any project looking to construct in this area.	Mitigation in the form of restoration is anticipated to be required.
E-8	Unknown environmental conditions discovered during construction	During construction, the Developer could encounter previously unidentified issues, such as contaminated soil, archeological remains, rare, threatened or endangered species, unidentified utilities, etc.	Environmental monitor will be on-site during construction. Such findings could require relocating and/or redesigning structures resulting in construction delays.
E-9	Violation of env. requirements during construction	Construction activities could result in violations of environmental permits/approvals due to inadequate control measures or not following plans (<i>i.e.</i> , storm water discharges) resulting in stop work notice.	The risk can be mitigated by following Best Management Practices and ensure crews are adequately trained to implement EM&CP and other environmental permit/approval requirements.

Long Island PPTN Project Risk Assessment Register

Date: 4/20/2023

Project:	All
Developer:	All
Project Name:	All

Item #	Risk Title	Description	Comments
Property, Routes and Siting Concerns			
P-1	Gas pipeline mitigation	Transmission line crossings and paralleling of natural gas pipelines may require grounding or other mitigation, and natural gas pipeline entities are increasingly aware of this issue and demanding mitigation to be installed by transmission utilities.	The cost of gas pipeline mitigation studies and mitigation requirements are relatively small compared to the overall project cost. The risk can be mitigated by a study to determine the exact location of gas pipeline(s) and recommend mitigation requirements.
P-2	Transmission line crossings	Crossing of other transmission and distribution lines: creates additional schedule risk, to the extent an outage needs to be scheduled; creates additional operating risk, to the extent a single event could remove both elements from services; and creates cost risk to the extent unexpected costs such as raising, lowering, or relocating an existing line is required.	This risk is mitigated by early identification of all necessary crossings. For example, this risk is best minimized during construction through frequent coordination with the existing transmission line owner and installation of protective netting and other protection prior to pulling sock line and conductor. This risk can be mitigated through the development of High Risk Evolution Plans for transmission crossings, which include, at a minimum, coordination with all involved utility owners, contractors, construction and project management planning sessions and a detailed schedule of events for crossing.
P-3	Highway, Railroad Crossings, Navigable Waterway crossings	Crossing of Highways, Railroads, and Navigable Waterways creates additional risk to the project schedule and cost, depending on the requirements imposed during construction.	The risks can be mitigated by early identification of all necessary crossings. Prior to and during construction this risk is best minimized through frequent coordination with those responsible for the operation of the facilities being crossed. Develop High Risk Evolution Plans for all major highway, RR or waterway crossings which include at a minimum coordination with RR, flaggers, contractors, Local and state police / highway patrol, US Coast Guard, construction and project management planning sessions and a detailed schedule of events for crossing.
P-4	Discovery of buried utilities and other encumbrances or poor soil conditions in planned routes of underground cables	May require relocation of existing facilities and/or rerouting of new circuit.	
P-5	Additional cable vaults	Additional cable vaults might be required due to turning angle, major crossings (e.g., roadway, aqua duct, utilities, railroad).	GPR study, test pits, and engineering review.
P-6	Routing Concern- Significant Route Changes	During the Article VII process there is a risk that the final approved route may have material differences than the proposed route.	
P-7	Property Acquisitions Concern- ROW Easements and Access	Private ROW and land acquisition or public ROW Use or Consent Agreements can result in changes to route alignment, requiring additional environmental surveys, permit amendments, and construction start delay.	The risk can be mitigated by instituting early outreach with landowners and develop route refinement tracking process so that all project SMEs review potential changes.

Long Island PPTN Project Risk Assessment Register

Date: 4/20/2023

Project:	All
Developer:	All
Project Name:	All

Item #	Risk Title	Description	Comments
Construction and Operational Concerns			
C-1	Supply Chain Issues	Material and equipment shortages and delayed shipments.	The risks can be mitigated by proper quality assurance during engineering to insure adequate quantities ordered. Procurement with sufficient period of float between scheduled deliveries from suppliers and when material is needed for construction and proactive monitoring and expediting.
C-2	Operational issues	Need to maintain resources for emergency response for the life of the facility.	This risk can be mitigated by maintaining a local staff, contracting with emergency restoration provider in the project area, and entering into mutual assistance agreements with neighboring utilities.
C-3	Need for additional Network Upgrade Facilities	Detailed studies, such as fault studies and protection coordination for the project, will normally be completed during the System Impact Study, the Facilities Study, and detailed engineering.	The new facilities and Upgrades proposed by the Developers as a part of its project may require replacement of breakers, protection equipment etc to connect reliably to the existing system.
C-4	Catastrophic HSE / Safety Event	High-voltage transmission and substation work is inherently dangerous. Accidents that occur on projects of this nature frequently result in serious injury or fatality. Catastrophic safety events, such as loss of life, can result in extended work stoppages across all stages of the project.	This risk can be mitigated through a robust Project and Site Safety Program implementation. Project Orientations verify training of ALL project personnel. Extensive Health, Safety and Environmental (HSE) management presence during construction helps to ensure compliance.
C-5	Construction Quality Control	Compliance with project specifications and quality can be compromised if installations are not properly monitored. Structure misalignments, improper structure framing, use of incorrect materials, etc. can result in re-work, unnecessary delays, and project overruns. Larger and complex projects that require greater resources are more susceptible to Quality Control Issues. If the NYPSC cited a contractor as being in non-compliance, the result can be extended work stoppages.	This risk can be mitigated by detailed Quality Control/Quality Assurance Plans during early planning stages and in a detailed Project Execution Plan; ensuring inspection processes are in place for all components of construction; and considering the utilization of third-party inspectors to ensure compliance.
C-6	Change Order Management - Construction Impacts	Unresolved Change Orders may result in delays to construction and impact the schedule.	This risk can be mitigated by including detailed Change Order Management Plan and process in the Project Execution Plan in order to mitigate potential delays.
C-7	Night time work	All projects have transmission routes through heavily trafficked areas and intersections with underground/overhead utilities.	Doing work during nighttime hours will mitigate this risk.
C-8	Material, fuel price	Current material and fuel escalation rate is unpredictable and could fluctuate greatly over next few years.	Establish a contingency budget to cover the increase.
C-9	Labor shortage	Labor resource to perform the construction activities and availability of qualified supervision.	Early engagement with local unions, establish bonus incentives, retainage, hiring bonuses, etc.
C-10	Work in commercial & residential area	Work hours might be restricted in the commercial and residential areas.	Early engagement and communication with communities and local authorities by PR and permitting SMEs. Divide project into segments and work in multiple segments concurrently to mitigate the overall project schedule impact.
C-11	Bridge/overpass clearance	Low clearance for bridges/overpasses may hinder transport of high-profile equipment.	Verify clearances of all bridges/overpasses prior to construction and confirm appropriate routes for high-profile equipment.
C-12	Submarine Cable Vessel Availability	Submarine cable installation utilizes specialized cable laying vessels. There are only a limited number of these vessels worldwide—some of the vessels are owned by individual cable manufacturers. Availability may be limited.	This can be mitigated by early coordination and contracting with vessel suppliers (e.g., target 2 years in advance).

Long Island PPTN Project Risk Assessment Register

Date: 4/20/2023

Project:	All
Developer:	All
Project Name:	All

Item #	Risk Title	Description	Comments
C-13	Construction Concern- Space for Trenchless Equipment	There are several crossings for all projects that require Jack and Bore or Horizontal Directional Drilling. Implementing these crossing can be challenging due to the amount of construction space required and being in close proximity to other utilities. Modifications to proposed routes may be necessary to accommodate the construction equipment.	

**Long Island PPTN Project Risk Assessment Register
Heat Map**

Probability Risk Will Occur	Very High (VH)				T043, T044
	High (H)			T037, T038, T041	T039, T042
	Medium (M)		T053	T036, T040	
	Low (L)		T035, T047, T048, T049, T051, T052		
		Low (L)	Medium (M)	High (H)	Very High (VH)
Cost and Schedule Risk					

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T035
Developer:	LS Power
Project Name:	Atlantic Gateway

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	Comments
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Environmental and Permit Concerns						
E-1	Cable and Pipeline Crossing	The waters surrounding Long Island and New York City contain a large number of existing submarine linear infrastructure, including electric/telecommunication cables and pipelines. Crossing of linear infrastructure will likely require approvals from the asset owner. Failure to receive permission to cross existing linear infrastructure could result in a specific submarine route not being feasible.	L	L	L	This project has 1 cable and 1 pipeline crossing. Existing infrastructure, including pipelines, communications, and electric cables, would require authorization from the owners to cross. Most approvals would likely be part of the Article VII process, but any Connecticut or Federal approvals would be separate. LS Power's proposed alternate route avoids crossing into Connecticut's jurisdiction.
E-2	Navigation Channels and Anchorages- Lower Risk	The waters surrounding Long Island and New York City contain a large number designated channels and anchorage. Therefore, routing through this area is very complex and will cross multiple navigation features. ▪ Implications: This work will need to be completed in a manner that does not impact navigation in the busy New York port. This is likely to include HDD across high traffic areas. A USACE Section 408 permit will be required and if numerous and/or large lengths of channels/anchorages are crossed this could be a lengthy process. Additionally, crossing anchorages and channels requires increased burial depth. Current guidance from USACE is 15 feet below authorized depth or the actual maintained depth, whatever is deeper. Furthermore, if areas of high contamination are crossed, regulatory agencies could require alternate cable burial methods which could be more time consuming and costly (i.e., mechanical dredging with an environmental bucket and backfilling with clean fill).	L	L	L	This project crosses 1 navigation area and 1 anchorage area. Crossing of Navigation Channels and Anchorage Areas would require authorization from the USACE under Section 408. The USACE may require low-impact crossing methods, such as HDD, or may deny the authorization outright.
E-3	Connecticut Permitting	A portion of the transmission route across the Long Island Sound is in close proximity to the Connecticut state boundary near the landing at Port Chester. It is recommended that the project be designed to stay within the boundaries of New York to avoid additional permitting and authorizations from Connecticut.	L	L	L	LS Power's proposed alternate route avoids crossing into Connecticut's jurisdiction.

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T035
Developer:	LS Power
Project Name:	Atlantic Gateway

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	Comments
Property, Routes and Siting Concerns						
P-1	Routing Concern- Bridge Crossing	Southgate – Northgate Line: May not be able to install cable on King St. at the bridge crossing noted as D7 and D8 (see Attachment C.2A.1 Page 63) due to low clearance (approximately 3') to waterway running between two ponds.	L	M	L	LS Power's proposed Alternate B route avoids this crossing.
P-2	Property Site Concerns- Northgate substation- subsurface condition	Approximately 50% of the site could encounter rock during excavation and the site might require extensive slope protection. Site conditions will require further investigation to quantify. This could have high cost and schedule impact depending on volume of rock excavation and methods used (i.e., blasting likely not allowed in this area)	H	M	L	Independent estimate has assumed that rock excavation is required.
P-3	Property Acquisition Concern- Ruland Road	LIPA is planning to utilize available property at the site. LS Power will need to coordinate with the utility and potentially modify its layout to accommodate the LIPA-planned facility, if needed.	M	M	L	
Design Concerns						
D-1	Design Concern - No spare power cable conduit	Replacement of a failed cable would be more difficult without a spare conduit.	L	L	L	
D-2	Design Concern- Multiple Circuits in Same Duct Bank- Higher Risk More Than 50 miles	All three circuits are installed in the same duct for the Longshore – Southgate and Southgate – Northgate lines. This has the potential risk of two or more circuits being damaged if the duct bank was compromised.	M	M	L	Longshore – Southgate - 3 ckts, 21 miles Southgate – Northgate - 3 ckts, 29 miles
D-3	Design Concern- Barrett	The proposal identifies Barrett as a potential Network Upgrade Facility. The proposal assumed that Barrett will be rebuilt to support Empire Wind II and accommodate three 345kV lines from the proposed Longshore substation. Empire Wind II is connecting into Liotta substation.	M	H	H	
D-4	Design Concern- Potential Flooding or Inundation by Storm Surge	Some proposed substations are located in or near a 100-year or 500-year flood zone and/or have the potential for being inundated by a Category 1 storm. The proposal does not address how the substations will be designed to reduce the potential impact of flooding.	L	L	L	The project has 1 substation potentially impacted with a risk score of 7.5.

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T035
Developer:	LS Power
Project Name:	Atlantic Gateway

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	Comments
D-5	Design Concern - PARs are not equipped with Bypass Switch	A failure of one of the three 345kV PARs would result in a long-term outage of the impacted 138kV line between Longshore and Barrett. Also, an outage of the line will be required to perform maintenance on the PAR.	M	L	L	
D-6	Design Concern - Shunt Reactors are not equipped with breakers or disconnect switches	Three 345kV Lines between Longshore and Southgate have shunt reactors at each end of the lines. Failure of a shunt reactor will trip the line out of service. Also, an outage of the line will be required to perform maintenance on the shunt reactor.	M	L	L	
D-7	Design Concern- Millwood Cap Bank Yard and ROW Access Drive	The proposed GIS bus for the two Buchanan lines will be crossing the access drive to the capacitor bank yard and the transmission ROW.	M	L	L	The proposed GIS will need to be either elevated to allow vehicles to cross under or placed below ground.
D-8	Design Concern- Millwood Underground Line to Northgate	The proposed underground cable from Millwood to Northgate is being routed around the eastern side of the existing capacitor bank yard. Due to an elevation change and rocky conditions, there is an existing retaining wall along the eastern side of the capacitor bank yard.	M	L	L	The underground cable will need to be routed around the existing retaining wall.
D-9	Design Concern- Ruland Rd.	The two proposed 138kV bay additions at Ruland Rd will interfere with an overhead 138kV strain bus to Banks #2 and #4, an overhead 69kV line running from the 69kV yard to air core reactors located in the 138kV yard and an underground 138kV cable (Line 567).	H	M	L	Modifications to the existing infrastructure is required to allow the construction of the two bay additions.
D-10	Design Concern- Ruland Rd.	The one-line diagram shows that one of the 138kV ties from Southgate to Ruland Rd is going to terminate in the existing line terminal position for the 661 line to Pilgrim and the Pilgrim 661 line is to be relocated to the new bay addition. However, the Plot Plan is showing the underground connection between Southgate to Ruland Rd terminating in the incorrect line terminal position. The existing 661 line exits overhead, not underground. Also, the proposed design does not provide a method for tying the existing OH 661 line into the new bay addition.	H	M	L	The 138kV ties between Ruland Rd and Southgate and the relocation of Line 661 needs to be redesigned.
D-11	Design Concern- Southgate	The west side of the proposed Southgate substation borders a U.S. Post Office. There is a large discharge area of the property that is owned by the U.S. Post Office. The layout will need to be designed around this area.	H	L	L	

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T035
Developer:	LS Power
Project Name:	Atlantic Gateway

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	Comments
Construction and Operational Concerns						
C-1	Construction Concerns- HVDC Lead-times	Due to high demand and equipment complexities, manufacturer's are quoting lead times up to 4 years. With three units being installed, it would take an additional 6 months for the second unit and another six months for the third unit to be installed, tested, and commissioned.	H	L	H	
C-2	Construction Concern- Millwood - Lines to Buchanan and Pleasant Valley Outage	Pleasant Valley (W80, W81) and Buchanan (W97, W98) lines exit the Millwood substation to a double circuit pole. The proposed design is showing two deadend structures being installed at this location to make the transition from overhead to GIS. This installation will require the outages for both lines for an extended period of time. However, this is not accounted for in the Outage Plan.	H	H	H	
C-3	Construction Concern- Millwood Access Road	Due to the terrain and rock conditions, access to the site will be difficult and the Developer's proposal did not include a design for an access road. The Transmission Owner has stated that they cannot obtain access through their facility.	M	M	L	Based on the property outline shown on the Developer's Plot Plan it appears that they could obtain access from Shingle House Rd. The view from the road shows this to have a steep slope and rocky terrain and it is adjacent to a residential home.
C-4	Construction Concern- Submarine Cable Landing Sites	Construction of the underground cables within a roadway requires approximately 30'-35' width for vehicles and equipment. Fox Island Rd near the submarine cable landing at Port Chester and Shore Rd near the submarine cable landing at Cold Springs Harbor are only 25' wide. Therefore, the entire roadways would be closed down during construction eliminating the only access to homes and businesses.	VH	VH	M	Utilizing the proposed alternate landing locations would mitigate this concern. However, utilizing the alternate route will result in longer transmission lines (4 miles additional terrestrial cables).

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T036-T044
Developer:	NextEra
Project Name:	Core 1, 2, 3, 4, 5, 6, 7, Enhanced 1, Enhanced 2

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T036 Core 1	T037 Core 2	T038 Core 3	T039 Core 4	T040 Core 5	T041 Core 6	T042 Core 7	T043 En 1	T044 En 2	Comments
Environmental and Permit Concerns															
E-1A	Cable and Pipeline Crossing	The waters surrounding Long Island and New York City contains a large number of existing submarine linear infrastructure, including electric/telecommunication cables and pipelines. Crossing of linear infrastructure will likely require approvals from the asset owner. Failure to receive permission to cross existing linear infrastructure could result in a specific submarine route not being feasible.	L	L	L	X	X	X		X	X				These projects have 1 or 2 cable crossings. Existing infrastructure, including pipelines, communications and electric cables, would require authorization from the owners to cross. Most approvals would likely be part of the Article VII process, but any Federal approvals would be separate.
E-1B	Cable and Pipeline Crossing	See E-1A	M	L	L				X						This project has 4 cable crossings and 3 pipe crossings. Existing infrastructure, including pipelines, communications, and electric cables, would require authorization from the owners to cross. Most approvals would likely be part of the Article VII process, but any Federal approvals would be separate.
E-1C	Hudson River Routing- Cable and Pipeline Crossings: To Buchanan	There are a large number of existing pipelines/cables (i.e., Lower New York Bay Lateral Pipeline, multiple Narrows Cables/Pipeline Areas, Neptune Transmission, Bayonne Energy Center, 3 Cross Hudson Pipelines, and a large number of telecom cables) that must be crossed. • Implications: Owner approval to cross these is likely required. Failure to get owner approval could be a potential no/go for a proposed route. Proper setbacks must be maintained to ensure no impacts to existing infrastructure.	VH	H	VH							X	X	X	These projects have as many as 33 cables and 8 pipeline crossings. Existing infrastructure, including pipelines, communications, and electric cables, would require authorization from the owners to cross. Most approvals would likely be part of the Article VII process, but any New Jersey or Federal approvals would be separate. The lines to Buchanan (T042 and T044) and the lines from Farragut to Sprain brook Landing (T042, T043 and T044) have the potential to cross into New Jersey territory.

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T036-T044
Developer:	NextEra
Project Name:	Core 1, 2, 3, 4, 5, 6, 7, Enhanced 1, Enhanced 2

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 months	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T036 Core 1	T037 Core 2	T038 Core 3	T039 Core 4	T040 Core 5	T041 Core 6	T042 Core 7	T043 En 1	T044 En 2	Comments
E-2A	Navigation Channels and Anchorages- Higher Risk	Upper NY Harbor is almost entirely covered in designated channels and anchorage. Therefore, routing through this area is very complex and will cross multiple navigation features. • Implications: This work will need to be completed in a manner that does not impact navigation in the busy NY port. This is likely to include HDD across high traffic areas. However, within some areas of Upper NY Bay, HDD can be difficult given limited viable locations for entry/exit pits and laydown areas given these navigation features. A USACE Section 408 permit will be required and if numerous and/or large lengths of channels/anchorages are crossed this could be a lengthy process. <u>Given the large number/length of crossings and potential to impact navigation, permit issuance is not a guarantee.</u> Additionally, crossing anchorages and channels requires increased burial depth. Current guidance from USACE is 15 feet below authorized depth or the actual maintained depth, whatever is deeper. USACE also recently authorized a new NY/NJ Harbor Deepening Study to investigate increasing dredge depths within NY Harbor. Furthermore, if areas of high contamination are crossed, regulatory agencies could require alternate cable burial methods which could be more time consuming and costly (i.e., mechanical dredging with an environmental bucket and backfilling with clean fill).	M	M	M				X			X	X	X	These projects cross as many as 6 navigation channels and 8 anchorage areas. Crossing of Navigation Channels and Anchorage Areas would require authorization from the USACE under Section 408. The USACE may require low-impact crossing methods such as HDD or may deny the authorization outright. Has a potential need for re-routing.
E-2B	Navigation Channels and Anchorages- Lower Risk	See E-2A	L	L	L	X	X	X		X	X				These projects cross 1 anchorage area.
E-3A	Contaminated Sediment- Hudson River from Battery to 200 Miles North.	The seafloor sediments in the areas surrounding Long Island and New York City contain known areas of contamination, as well as areas that are likely to contain contaminated sediments as a result of historic industrial activities and discharges. The bottom disturbance necessary to install a submarine cable into the seafloor has the potential to resuspend these contaminated sediments. Agencies are likely to require avoidance and rerouting around areas of high contamination. This area is considered Federal and NY State Superfund Site as a result of PCB contamination. - Implication: Sediment sampling will be required and if impacts found, mitigation measures or rerouting could be required.	H	M	H				X			X	X	X	Approximate length of Hudson River PCB Superfund crossed: T039 - 19 miles T042 - 41 miles T043 - 59.5 miles T044 - 60 miles Potential risk of not getting approval.

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T036-T044
Developer:	NextEra
Project Name:	Core 1, 2, 3, 4, 5, 6, 7, Enhanced 1, Enhanced 2

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T036 Core 1	T037 Core 2	T038 Core 3	T039 Core 4	T040 Core 5	T041 Core 6	T042 Core 7	T043 En 1	T044 En 2	Comments
E-3B	Contaminated Sediment- Lower New York Bay, Upper New York Bay, and the East River	See E-3A.This area has either known contamination or suspected contamination.	M	M	H				X			X	X	X	

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T036-T044
Developer:	NextEra
Project Name:	Core 1, 2, 3, 4, 5, 6, 7, Enhanced 1, Enhanced 2

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T036 Core 1	T037 Core 2	T038 Core 3	T039 Core 4	T040 Core 5	T041 Core 6	T042 Core 7	T043 En 1	T044 En 2	Comments
E-4	Expansion into East River- New Farragut Substation	NYC Department of Small Business Services is the agency that issues permits for improvement and maintenance to waterfront structures and NYC owned waterfront buildings. The proposed expansion into the East River appears to be in a mapped V-Zone based on the NYC Preliminary Flood Insurance Rate Maps. Pursuant to G304.2 V-Zone Construction Standards Section 6, (NYC, 2022) Development, including land-disturbing activities, seaward of the reach of mean high tide are prohibited. Therefore, to develop a pier in this area which appears to be prohibited under the above code, a variance from the Board of Standards and Appeals would likely be needed.	H	M	H		X	X	X				X	X	If permit is not granted, a different site or redesign would be required.
E-5	Farragut SPCC/SPDES	Utilizing oil-filled shunt reactors for the new Farragut 345kV substation being built on a platform in the East River may have difficulty with SPCC and SPDES permitting. High risk that an equipment failure would result in oil reaching navigable waterway.	L	L	L		X	X	X				X	X	
E-6	East River Tunnel Crossings- Farragut-Sprain Brook 345kV	Routes cross five Subway tunnels and the Battery Tunnel. MTA, Port Authority of NY/NJ, and potential other owners are likely to require permission to cross these pieces of infrastructure. There does not appear to be much of a precedent for crossing these tunnels with linear infrastructure. Has the potential of being a "no/go" condition if owners do not allow permission to cross. Moreover, the East River has potential shallow bedrock and the tunnels in the East River are in some cases very old and shallow. This could add further complications to crossing these tunnels. If proper burial depths could not be reached while crossing, armoring of the lines could be logistically challenging given some tunnels' ages.	M	M	H				X				X	X	5 tunnels will need to be crossed.
E-7	Hudson River Routing- Tunnel Crossing: To Buchanan and Farragut- Sprain Brook 345kV	Hudson Tunnels including the Lincoln, Holland, NJ Transit and multiple PATH tunnels will need to be crossed. MTA, Port Authority of NY/NJ, and potential other owners are likely to require permission to cross these pieces of infrastructure. There does not appear to be much of a precedent for crossing these tunnels with linear infrastructure.	H	H	H				X			X	X	X	5-10 tunnels will need to be crossed. Has the potential of being a "no go" condition if owners do not allow permission to cross.

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T036-T044
Developer:	NextEra
Project Name:	Core 1, 2, 3, 4, 5, 6, 7, Enhanced 1, Enhanced 2

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T036 Core 1	T037 Core 2	T038 Core 3	T039 Core 4	T040 Core 5	T041 Core 6	T042 Core 7	T043 En 1	T044 En 2	Comments
E-8	Hudson River Routing- The Narrows: To Buchanan	The Narrows themselves and the areas immediately north pose a physical constraint in the number of cables coming into Upper NY Harbor. An offshore wind project is proposing to come in on the east side of Ambrose Channel going to Gowanus substation and other offshore wind projects are likely considering to directly interconnect from offshore wind sites to onshore substations in New York City. Additionally, NYSDERDA was investigating meshed vs. radial interconnection to bring cables into NYC area given these constraints. • Implications: Given the limited amount of space that physically exists in the Narrows and setbacks between cables necessary for installation and maintenance, only a finite number of cables can be routed here. Ambrose Channel is the only deep draft channel to Upper New York Bay and is highly important to commerce; routing within the channel and limiting its navigability is likely to be an issue. Depending on the timing of the transmission project and the offshore wind generationTherefore, cables will likely need to be routed outside the Ambrose Channel. The abutments of the Verrazano Bridge further reduce the size of this area.	H	H	H							X	X	X	The density of existing infrastructure and regulated areas, and large number of users in this area add complexity to any routes passing through The Narrows.
E-9	Permitting Concern- Sprain brook Bay Addition	345kV AIS Bay addition will require a very large and complex retaining wall to accommodate the 60'-90' drop-off. It will be difficult to obtain permits due to its impact on the residential neighborhood.	VH	M	VH	X	X	X	X	X	X	X	X	X	
E-10	Permitting Concern- Cable Landing and Transition Substation at Davenport Park	Transition stations are required to interconnect the proposed 2-submarine cables per phase with the single terrestrial cable per phase. The proposed location where the submarine cables are coming ashore in the New Rochelle area at Davenport Park is in sensitive areas due to the park, beach, and adjacent country club. Construction of a transition station in these areas would have significant visual impact and may be subject to public opposition that may require relocation away from those sensitive areas. A similar project constructed in the 1990s in this area (near Davenport Park in New Rochelle) required securing property and the construction of a sizeable indoor substation building with a "residential" façade to hide the station.	H	M	H	X	X	X	X	X	X	X	X	X	

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T036-T044
Developer:	NextEra
Project Name:	Core 1, 2, 3, 4, 5, 6, 7, Enhanced 1, Enhanced 2

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 month	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T036 Core 1	T037 Core 2	T038 Core 3	T039 Core 4	T040 Core 5	T041 Core 6	T042 Core 7	T043 En 1	T044 En 2	Comments
E-11	Permitting Concern-Cable Landing and Transition Substations for Sprain Brook - Farragut	A transition station is required to interconnect the proposed 2-submarine cables per phase with the single terrestrial cable per phase. The proposed location where the submarine cables are coming ashore at Sprain Brook landing is for a marina with limited space. Construction of a transition station in this area would have significant visual impact and may be subject to public opposition that may require relocation away from those sensitive areas.	VH	H	H				X				X	X	
E-12	Permitting Concern-Cable Landing at Buchanan	The proposed landing for the cable going to Buchanan is at a commercial boat docking area. It may be difficult to obtain permits or construction may be limited to specific time of year due potential impact to commercial operations parking.	H	M	M								X	X	
E-13	Permitting Concern-Cable Landing and Transition Substations for Buchanan - Barrett	A transition station is required to interconnect the proposed 2-submarine cables per phase with the single terrestrial cable per phase. The proposed location at Long Beach where the submarine cables are coming ashore is a sensitive area. Construction of transition stations in this area would have significant visual impact and may be subject to public opposition that may require relocation away from those sensitive areas.	VH	H	H								X		

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Property, Routes and Siting Concerns															
P-1	Property Acquisition Concern - Proposed 345kV East Garden City Substation	The fenced area shown on the plot plan appears to impact the rear access for two adjacent commercial buildings.	H	M	L	X	X	X	X	X	X	X	X	X	Potential impact to adjacent buildings may require their purchase or other arrangement.
P-2	Route Concern- East Garden City Line Exits	All of the underground lines exiting East Garden City as shown in the map books are being routed in Stewart Ave, which is a busy road and congested with other existing underground utilities. This will make it difficult to construct. Obtaining sufficient available space within the public easement may be difficult such that there may not be sufficient space to install all of the lines.	H	H	H	X	X	X	X	X	X	X	X	X	Lines being routed in Stewart Ave include: 1 - 345kV to Dunwoodie (or 1 - 345kV to Farragut), 2 - 345kV to Sprain brook, 3 - 138kV to Newbridge 3 - 138kV to Valley Stream. Modifications to routes may be required.
P-3	Property Acquisition Concern - Sprain Brook	The addition of the three 345kV reactors are not entirely located within the utility's property. An adjacent property will need to be obtained.	H	L	L	X	X	X	X	X	X	X	X	X	
P-4	Property Acquisition Concern- Transition Station at Hempstead Harbor	A transition station is required to interconnect the proposed 2-submarine cables per phase with the single terrestrial cable per phase. The proposed location for the submarine cables coming ashore at Tappen Beach for the New Rochelle-Hempstead Harbor line is an existing gas regulator station.	VH	VH	M	X	X	X	X	X	X	X	X	X	The transition station will need to be built on a different site. May increase length of transmission lines.

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Design Concerns															
D-1	Design Concern - Jamaica	The proposed design does not meet Con Edison's design principle. The proposed location for the breaker addition as shown on the Plot Plan is electrically in the wrong location. There is not sufficient space to install the breaker at the location proposed by the Developer. The location for the line exit down the side of the building would interfere with the building's door entrance and other equipment already mounted on the side of the building. Routing the underground cable through the parking lot will be difficult due to two water lines that are installed for the fire deluge system. Installing additional equipment on the roof of an existing building may result in the need for significant structural reinforcement. Spacing is extremely congested. The installation of GIS bus and equipment would require the existing, open air 138kV bus to be de-energized to safely conduct the work. Any future maintenance on the GIS bus, or replacement thereof due to electrical failure, would require other station components, such as open-air bus, to be de-energized.	VH	VH	M	X	X	X	X	X	X	X	X	X	Per Con Edison's specification (CE-ES-2002-I), equipment needs to be arranged such that a failure does not jeopardize the continued operation of the facility. The most likely means for mitigation would be to build a new facility on an adjacent property.
D-2	Design Concern- Northport HVDC	Design shows three 138kV lines tied to the HVDC converter. However, there is no means shown or space provided for tying these lines together and connecting to the HVDC interface transformers. Interconnecting the HVDC to 138kV results in high current (5000A), which increases the complexity of the design. The space allocated is the same as Sprain brook which ties to one 345kV line.	H	M	L						X	X	X	X	Assumed a 3-breaker ring will be required. Costs are included in Independent cost estimate.
D-3	Design Concern- Northport	The underground cables running the length of the existing substation from the proposed transformers to the proposed GIS will be crossing several 12'-16' deep tunnels that run from the plant to the discharge area across the substation. Some are only 5'-6' below grade. These may cause interference with installing the proposed cables.	H	M	M			X	X	X	X	X	X	X	
D-4	Design Concern- Northport	The location for the proposed transformer and 345kV line and the proposed HVDC facilities may interfere with an existing 8" oil pipe that runs from off the coast to the oil tank farm.	M	M	L			X	X	X	X	X	X	X	

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D-5	Design Concern-Barrett HVDC	Design shows three 138kV lines tied to the HVDC converter. However, there is no means shown nor space provided for tying these lines together and connecting to the HVDC Interface transformers. Interconnecting the HVDC to 138kV results in high current (5000A) which increases the complexity of the design. The space allocated is the same as Sprain Brook which ties to one 345kV line.	H	M	L								X		Assumed a 3 breaker ring will be required. Costs are included in Independent cost estimate.
D-6	Design Concern-Buchanan HVDC	Design calls for two HVDC stacked converters. However, the space shown is the same as for one converter. Additional property may be required for additional equipment for two converters.	H	H	L									X	
D-7	Design Concern-Buchanan HVDC	The planned location for the HVDC station impacts an existing 345kV transmission line. The proposed design does not address the relocation of the line.	H	M	L							X		X	
D-8	Design Concern-HVDC Cable Size	Estimate documents state that the size for the HVDC cable is to be 2000mm ² . This size cable is the minimum required to meet the ampacity requirements. It may be determined to be undersized during detailed engineering once specific Geotech information, cable crossings and duct bank configuration are determined.	M	M	L						X	X	X	X	Independent estimate utilized a larger size cable.
D-9	Design Concern-345kV PAR East Garden City	Manufacturer, who responded to SECO's budgetary quotation request, indicated that PAR of the proposed size (1050 MVA) cannot be built. Two 3-phase or three 1-phase parallel PARs are required. Design modification is required. There may not be sufficient space to accommodate additional equipment.	H	H	L	X	X	X	X	X	X	X	X	X	Additional property may need to be acquired. Independent estimate included cost for two 3-phase PARs.
D-10	Design Concern-345kV PAR Ruland Road	Manufacturer, who responded to SECO's budgetary quotation request, indicated that PAR of the proposed size (1050 MVA) cannot be built. Two 3-phase or three 1-phase parallel PARs are required. Design modification is required. There may not be sufficient space to accommodate additional equipment.	H	H	L		X	X					X	X	Additional property may need to be acquired.
D-11	Design Concern-345kV PAR Buchanan	Manufacturer, who responded to SECO's budgetary quotation request, indicated that PAR of the proposed size (1050 MVA) cannot be built. Two 3-phase or three 1-phase parallel PARs are required. Design modification is required. There may not be sufficient space to accommodate additional equipment.	H	H	L									X	Additional property may need to be acquired.
D-12	Design Concern-Newbridge Road Underground Cable Crossings	138kV underground cables will be crossing each other and crossing 345kV underground cables within the substation. This will require deeper duct banks and will impact the cables' ampacity ratings.	H	L	L	X	X	X	X	X	X	X	X	X	Final cable sizing will need to take into account the cable depths and the crossings in the substation.

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Project:	T036-T044
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Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
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D-13	Design Concern-Newbridge	The proposed location for the new GIS is currently occupied by a 138kV bay that ties to the low side of Bank #2 and the high side of Bank #9. The bay area is elevated approximately 10' above the rest of the station. The proposed GIS building extends beyond this elevated area requiring additional grading and a retaining wall. Also the GIS building will interfere with an existing oil pump building and an underground oil tank.	H	M	L	X	X	X	X	X	X	X	X	X	The existing oil pump building and associated oil lines along with the oil tank will need to be relocated.
D-14	Design Concern-Dunwoodie 345kV Existing Lines	The proposed location for the 345kV GIS is in the ROW of three 345kV transmission lines. The design does not provide a means to relocate the existing three 345kV lines to allow the GIS building to be constructed nor a means to interconnect them into the proposed substation. Due to the low-grade clearances and two of the existing lines being on double circuit poles in a vertical orientation, it will be very difficult to transition the lines to underground cables or GIS while meeting the system outage and restoration requirements.	VH	VH	VH	X	X	X	X	X	X	X	X	X	Will require long outages of the 3-345kV lines.
D-15	Design Concern-Dunwoodie New 345kV Line Exits	Due to a rock outcropping and a significant drop in elevation along the eastern side of the substation and ROW, it will be difficult to route a new underground line out of the proposed GIS towards the east, as proposed.	H	H	L	X	X	X	X	X	X	X	X	X	
D-16	Design Concern-Sprain Brook Bay	Proposed 345kV AIS bay on the east side of the substation will be very difficult to construct due to the 90' drop off in this area. A very large and complex retaining wall would be necessary which is not included in NextEra's design. It will be difficult to construct due to the limited access available and the impact on the residential neighborhood.	VH	VH	H	X	X	X	X	X	X	X	X	X	
D-17	Design Concern-Sprain Brook Proposed 345kV Line Exits	Due to a rock outcropping and a significant drop in elevation along the eastern and western side of the substation, it will be difficult to route an underground line, as proposed.	H	H	L	X	X	X	X	X	X	X	X	X	
D-18	Design Concern-Potential Flooding or Inundation by Storm Surge	Some proposed substations are located in or near a 100-year or 500-year flood zone and/or have the potential for being inundated by a Category 1 storm. The proposals do not address how the substations will be designed to reduce the potential impact of flooding.	H	M	L	X	X	X	X	X	X	X	X	X	Projects have five to ten substations potentially impacted with a Risk score ranging from 19 to 45. With 45 being the highest risk score of all proposals evaluated.

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D-19	Design Concern - PARs are Not Equipped with Bypass Switch- Corona and Buchanan	A failure of the PAR at Corona will result in a long-term outage of the 138kV line from Corona to Jamaica and failure of PAR at Buchanan will result in a long-term outage of the 345kv line from Buchanan to Eastview. Also, an outage of the lines will be required to perform maintenance on the PAR.	M	L	L									X	
D-20	Design Concern- Farragut Substation	The proposed design does not meet Con Edison's design principle. The proposed design requires the use of 345kV Gas Insulated Bus Work (GIB) and 345kV cables to connect the proposed substation to the existing facility. The installation of GIB would impede the replacement of existing Con Edison assets and the operations of the facility. Due to the below grade congestion around the Farragut substation, it is not feasible to install underground cables.	VH	H	H		X	X	X				X	X	
D-21	Design Concern - Reactors Not Equipped With Breakers- Buchanan, Ramapo and Sprain brook.	A failure of a shunt reactor will result in a long-term outage of the associated 345kV lines. Also an outage of the line will be required to perform maintenance.	M	L	L	X	X	X	X	X	X	X	X	X	One 345kV Reactor at Buchanan One 345kV Reactor at Ramapo Up to three 345kV Reactors at Sprain Brook
D-22	Design Concern- Multiple Circuits in Same Duct Bank- Lower Risk 50 miles or less	All projects included transmission sections where multiple circuits are installed in the same duct bank. This has the potential for all circuits being damaged if a strike occurred.	L	L	L	X		X	X	X	X				Five or less segments totaling less than 50 miles.
D-23	Design Concern- Multiple Circuits in Same Duct Bank- Higher Risk More Than 50 miles	All projects included transmission sections where multiple circuits are installed in the same duct bank. This has the potential for all circuits being damaged if a strike occurred.	M	L	L		X					X	X	X	Six or more segments totaling more than 50 miles.
D-24	Design Concern- Rainey	The proposed design does not meet Con Edison's design principle. Due to the location of the existing access road, surrounding equipment and a below grade oil tank, there is insufficient space between breakers 1E and 2E for the installation of a line terminal. Also it will be very difficult to install the underground cable through the substation, as proposed, due to interference with existing tunnels that run between Rainey and the Ravenswood plant, transformer oil containment pits and a security brick wall.	VH	VH	H	X	X	X	X	X	X	X	X	X	Major modifications to the existing infrastructure would be required to accommodate this installation.

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Project:	T036-T044
Developer:	NextEra
Project Name:	Core 1, 2, 3, 4, 5, 6, 7, Enhanced 1, Enhanced 2

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D-25	Design Concern-Rainey	Due to the location of the existing access road and surrounding equipment, there is insufficient space between breakers 1W and 2W for the installation of a line terminal. Also, it will be very difficult to install the underground cable through the substation, as proposed, due to interference with existing cable trench and crossing through the area of a newly installed transformer and PAR located on the north side of the substation.	VH	VH	H	X	X	X	X	X	X	X	X	X	Major modifications to the existing infrastructure would be required to accommodate this installation.
D-26	Design Concern-Ruland Rd.	The location for Line 562's new transition pole from overhead to underground is located in the center of the main access driveway.	L	L	L	X	X	X	X	X	X	X	X	X	New transition pole will need to be relocated. Modification to existing transmission tower will probably be required.
D-27	Design Concern-Ruland Rd.	There is insufficient space to add a breaker and line terminal position between breaker 1420 and the main bus.	H	M	M	X	X	X	X	X	X	X	X	X	Major modifications to the existing infrastructure would be required to accommodate this installation.
D-28	Design Concern-Valley Stream	There is insufficient space to add a breaker and line terminal position between breakers 1430 and 1450.	H	M	M	X	X	X	X	X	X	X	X	X	Major modifications to the existing infrastructure would be required to accommodate this installation. Also an existing oil pump building would need to be relocated.
D-29	Design Concern-Pilgrim	There is insufficient space to add a breaker(s) and line terminal position(s) between breakers 1350, 1390, and 1310.	H	M	M			X			X	X	X	X	Major modifications to the existing infrastructure would be required to accommodate this installation.

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Construction and Operational Concerns															
C-1	Construction Concern Installing Underground Cables in Existing Substations.	Installing proposed underground cables in the existing substations will be difficult without impacting existing foundations, conduit/trench systems, grounding, and buswork. Such installation could require additional or concurrent outages, complex construction sequences and/or more expensive construction methods.	H	M	M	X	X	X	X	X	X	X	X	X	Number of underground cables being routed through the existing substations include: Barrett - five 138kV cables EGC - three 138kV cables (2 cables cross each other) and two 345kV cables Newbridge - six 138kV cables with 13 crossings and four 345kV cables Rainey - three 345kV cables Ruland Rd. - three 138kV cables Valley Stream -three 138kV cables Corona - one 138kV cable Farragut - one or two 345kV cables Northport - five 138kV cables
C-2	Construction Concerns- HVDC Lead Times	Due to high demand and equipment complexities, manufacturers are quoting lead times up to 4 years for onshore HVDC converter stations and 5 years for onshore/offshore HVDC converter stations. It will take an additional six months to install, test, and commission a second unit.	H	L	H						X	X	X	X	
C-3	Construction Concerns- Sprain Brook HVDC Substation - Subsurface Condition	Approximately 90% of the site could encounter rock during excavation and the site might require extensive slope protection. Site conditions will require further investigation to quantify. This could have high cost and schedule impact depending on volume of rock excavation and methods used (i.e., blasting likely not allowed in this area)	H	M	L						X	X	X	X	Independent estimate has assumed that rock excavation is required.
C-4	Construction Concerns- New Rochelle-Dunwoodie, New Rochelle-Sprain Brook	Construction of the underground cables within a roadway requires approximately 30'-35' width for vehicles and equipment. Davenport Ave and Church St. near the Davenport Park transition station are only 25' wide. Therefore, the entire road way would be closed down during construction eliminating the only access to homes on the peninsula.	VH	VH	M	X	X	X	X	X	X	X	X	X	An alternate route will be required which may increase the length of the circuits.

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C-5	Construction Concern- Pipe Type Cables	One 345kV line and several 138kV transmission lines that are to be intercepted and tied into a proposed substation are oil-filled, pipe type cables. Tying into these type of cables requires managing the oil pressure and transitioning to EPR which adds an additional level of complexity to the construction. The extent of work required will be dependent on the cable's condition and age.	H	L	L	X	X	X	X	X	X	X	X	X	Barrett-Valley Stream 291 and 292 transition from EPR to oil pipe type cables in a vault outside of the Barrett substation. The pipe cables are tied together and the oil pressure is managed at Valley Stream. Barrett-Freeport 459 line Northport-Pilgrim 672, 677, 679 transition from EPR to oil pipe type cables in a vault outside of the Northport substation. Rainey-Mott Haven
C-6	Construction Concern- East Garden City 345kV Underground Cables to PARs	The proposed route for the underground cables to tie the existing 345kV PARs to the proposed GIS substation is along the west side of the substation heading north. Along the west side of the substation is a double-circuit overhead 138kV Lines 361 and 362 along with an overhead distribution circuit and communication circuit. There is a large double-circuit lattice structure for Lines 361 and 362 located in the north west corner of the substation adjacent to a building. Due to these interferences it will be very difficult to install the 345kV cables through this area.	H	L	L	X	X	X	X	X	X	X	X	X	An alternate route for the 345kV PARs will be required.
C-7	Construction Concern- East Garden City 345kV Cables to Transformers and 138kV Cable to Proposed PAR	The proposed route for the underground cables to tie the existing 345kV transformers to the proposed GIS substation and the 138kV cable to the proposed PAR are exiting towards the east and then turning north. It will be difficult to exit the substation to the east since there are three gas lines (30", 20", 8"), one 138kV pipe-type cable (Line 463), and 8" water lines that run North-South along the east side of the station that will need to be crossed.	H	L	L	X	X	X	X	X	X	X	X	X	An alternate route for the 345kV transformers would be required.
C-8	Construction Concern- Outages of Existing Facilities	In order to construct the project several existing elements (transformers, PARs, transmission lines, main busses) will need to be removed from service. Being able to schedule outages can impact the project schedule. Having a single element or multiple concurrent elements out of service can impact the reliability of the system.	VH	M	H	X	X	X	X	X	X	X	X	X	Number of elements out of service for 7 days or more: 51-58 Maximum # of concurrent elements: 5 # of elements out for more than 90 days: 7

Long Island PPTN Project Risk Assessment Register

Date: 04/20/2023

Project:	T047-T059, T051-T053
Developer:	Propel NY
Project Name:	Base 1-3 and Alt 5- Alt 7

	Very High (VH)	High (H)	Medium (M)	Low (L)
Probability Risk Will Occur	90-100%	50-89%	10-49%	Below 10%
Cost to Mitigate Risk	Greater than \$20M	\$11M-20M	\$6-\$10M	Below \$5M
Schedule Impact	More than 6 months	3-6 months	1-3 months	Less than 1 month

Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T047 Base 1	T048 Base 2	T049 Base 3	T051 Alt 5	T052 Alt 6	T053 Alt 7	Comments
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Environmental and Permit Concerns												
E-1	Cable and Pipeline Crossing	The waters surrounding Long Island and New York City contains a large number of exiting submarine linear infrastructure, including electric/telecommunication cables and pipelines. Crossing of linear infrastructure will likely require approvals from the asset owner. Failure to receive permission to cross exiting linear infrastructure could result in a specific submarine route not being feasible.	L	L	L	X	X	X	X	X	X	These projects have 1 cable crossing. Existing infrastructure, including pipelines, communications and electric cables, would require authorization from the owners to cross. Most approvals would likely be part of the Article VII process, but any federal approvals would be separate.
E-2	Navigation Channels and Anchorages- Lower Risk	The waters surrounding Long Island and New York City contain a large number designated channels and anchorage. Therefore, routing through this area is very complex and will cross multiple navigation features. • Implications: This work will need to be completed in a manner that does not impact navigation in the busy New York port. This is likely to include HDD across high traffic areas. A USACE Section 408 permit will be required and if numerous and/or large lengths of channels/anchorages are crossed this could be a lengthy process. Additionally, crossing anchorages and channels requires increased burial depth. Current guidance from USACE is 15 feet below authorized depth or the actual maintained depth, whatever is deeper. Furthermore, if areas of high contamination are crossed, regulatory agencies could require alternate cable burial methods, which could be more time consuming and costly (i.e., mechanical dredging with an environmental bucket and backfilling with clean fill).	L	L	L	X	X	X	X	X	X	These projects cross 2 navigation areas and 3 anchorage areas. Crossing of Navigation Channels and Anchorage Areas would require authorization from the USACE under Section 408. The USACE may require low-impact crossing methods such as HDD, or may deny the authorization outright.

Long Island PPTN Project Risk Assessment Register

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E-3	Contaminated Sediment- East River	The seafloor sediments in the areas surrounding Long Island and New York City contain known areas of contamination, as well as areas that are likely to contain contaminated sediments, as a result of historic industrial activities and discharges. The bottom disturbance necessary to install a submarine cable into the seafloor has the potential to resuspend these contaminated sediments. Agencies are likely to require avoidance and rerouting around areas of high contamination. This area has either known contamination or suspected contamination.	L	L	L	X	X	X	X	X	X	This impacts 1 Circuit to Tremont- 1.2 Miles Propel NY plans to cross the river using Horizontal Directional Drilling (HDD). Based on this plan, there is minimal chance that contaminated sediment will be impacted.
E-4	Contaminated Site- Northport	The proposed location for the HVDC converter station at Northport is at a large above-ground storage oil tank farm. Subsurface contamination could be found here. The need to address the contamination could impact cost and schedule. A full environmental survey prior to construction may be required to ensure there is no soil contamination.	M	M	M						X	

Property, Routes and Siting Concerns												
P-1	Property Acquisition Concern- Eastern Queens	Utility may be utilizing available property at the site. If Propel NY is unable to secure property, current plan may not contain sufficient property to build the proposed substation.	H	M	L					X	X	
P-2	Property Acquisition Concern- East Garden City	Utility may be utilizing available property at the site. If Propel NY is unable to secure property, current plan may not contain sufficient property to build the proposed substation.	M	M	L	X		X	X	X		
P-3	Route Concern- East Garden City Line Exits	Some of the underground lines exiting East Garden City, as shown in the map books, are being routed in Stewart Ave, which is a busy road and congested with other existing underground utilities. This will make it difficult to construct. Obtaining sufficient available space within the public easement may be difficult such that there may not be sufficient space to install all of the lines.	M	M	M	X		X	X	X		Lines being routed in Stewart Ave include: 1-345kV EGC-Tremont (Base 1, 3, Alt 5 and Alt 6) 1-345kV EGC- Shore Rd. (Base 1, 3, Alt 5 and Alt 6) 1-345kV EGC- Eastern Queens (Alt 6 Only) 1-138kV EGC-Shore Rd. (Base 3 Only)

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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T047 Base 1	T048 Base 2	T049 Base 3	T051 Alt 5	T052 Alt 6	T053 Alt 7	Comments
P-4	Property Acquisition Concern- Northport	The proposed location for the HVDC converter station at Northport is at a large above-ground oil storage tank farm. This site is currently in use as back up source for the power plant.	H	M	L						X	A new site would need to be identified.

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Design Concerns												
D-1	Design Concern- Use of 5900kcmil DC Submarine Cable	A conductor size above 5000kcmil will likely limit the number of manufacturers that are able to offer this size cable. 345kV cables sized 5900kcmil are at the limit of manufacturing capability. There is a risk that the 5900kcmil does not meet the capacity requirement once specific Geotech information, cable crossings, and duct bank configuration are determined during detailed engineering. Since a larger size cable is unavailable, the only option would be to use multiple cables per phase to satisfy ratings, which would require a larger cable trench to accommodate more conduits.	L	M	M						X	
D-2	Design Concern- Multiple Circuits in Same Duct Bank- Lower Risk 50 Miles or Less	There is one line segment that has two circuits in the same duct bank. This has the potential risk of two or more circuits being damaged if the duct bank was compromised.	L	L	L			X	X	X	X	Base 3: Barrett-EGC- 2 ckts, 8.8 Miles Alt 5: Shore Rd-New Rochelle-Sprain Brook- 2 ckts, 8.1 miles Alt 6: EGC to Eastern Queens- 2 ckts, 11.7 miles Alt 7: Barrett-Eastern Queens 2 ckts, 11 miles
D-3	Design Concern - No Spare Power Cable Conduit	Replacement of a failed cable could be more difficult without a spare conduit.	L	L	L	X	X	X	X	X	X	
D-4	Design Concern- Barrett Offshore Wind Interconnection	The proposal assumes that a new offshore wind substation that connects into Barrett will be designed to accommodate two 345kV lines from Propel NY's proposed Barrett substation.	M	H	H	X	X	X	X	X	X	
D-5	Design Concern- Potential Flooding or Inundation by Storm Surge	Some new substations are located in or near a 100-year or 500-year flood zone and/or have the potential for being inundated by a Category 1 storm.	M	M	L	X	X	X	X	X	X	Projects have 3 to 5 substations potentially impacted with a risk score ranging from 16 to 24.
D-6	Design Concern - PARs are Not Equipped with Bypass Switch	Without a means to bypass a PAR, its failure will result in a long-term outage of the associated line. Also, an outage of the line will be required to perform maintenance on the PAR.	M	M	L	X	X	X	X	X	X	There are a total of four to nine PARs in a project.

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D-7	Design Concern- Dunwoodie- Insufficient Space for Line Terminal	Per the one-line diagram, the project plans to add a 345kV line terminal to Eastern Queens between the breakers 6 and 8. However, the plot plan shows the connection to the existing GIS equipment between breakers 3 and 4. There is not sufficient space between breakers 6 and 8 to add the line terminal.	VH	H	H					X	X	A significant rebuild of the existing GIS would be required to add this line terminal leading to long outages of the facilities.
D-8	Design Concern- Dunwoodie Proposed 345kV Line Exit	Due to a rock outcropping and a significant drop in elevation along the eastern side of the substation and ROW, it will be difficult to route an underground line out of the proposed GIS towards the east, as proposed.	H	H	L					X	X	
D-9	Design Concern- Sprain Brook Proposed 345kV Line Exits	Due to a rock outcropping and a significant drop in elevation along the eastern and western side of the substation, it will be difficult to route an underground line, as proposed.	H	H	L	X	X	X	X	X	X	
D-10	Design Concern- Tremont	The proposed GIS equipment, which Propel NY preliminary identified as a potential NUF, is to be installed at the location of the existing bus connections between Banks 1 and 2 and the tie to the 345kV X28 line to Sprain Brook. The construction of the proposed NUF would require an extensive outage of the transformers and the line. Also, the proposed location of the control house will cut off access to the northern side of the substation.	H	M	M	X	X	X	X	X	X	In order to mitigate the outage, the potential GIS equipment may need to be installed on an adjacent property.
D-11	Design Concern- Barrett 138kV	There is insufficient space to replace the existing breaker 1330 with a double PASS breaker due to a large lattice deadend structure that would interfere with this	H	L	L		X				X	To mitigate this concern, the deadend structure would need to be relocated.
D-12	Design Concern- East Garden City Proposed 345kV Reactor	The location for the proposed 345kV reactor will interfere with a main cable trench and access road. In addition, the Plot Plan provided incorrectly shows the location of the existing Y49 line exit. Therefore, the proposed 345kV reactor will extend further to the west than shown. It may not fit within the fenced area of the substation. Also, the reactor would be installed under the double ckt overhead Lines 361 and 362, a distribution, and communication circuits.	H	H	M		X				X	Additional property may be required. Outages of Lines 361 and 362 may be required during construction, which is not identified in the Outage Plan. Also relocation of the distribution and communication circuits would be required.

Long Island PPTN Project Risk Assessment Register

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D-13	Design Concern- East Garden City 345kV Cables to Existing PARs	The proposed route of the 345kV cables from the existing PARs to the proposed substation is shown being routed through the 69kV yard. This will need to be routed around this existing equipment, including two new switchgear buildings, which do not show up the aerial view of the substation.	M	L	L	X		X	X	X		
D-14	Design Concern- Newbridge	Circuit breaker 1460 is to be replaced with a double PASS breaker. However, there are two underground cables (Lines 463 and 465) crossing this area, which may cause interference with the breaker's foundation.	L	L	L	X		X	X	X		
D-15	Design Concern- Northport	The new 138kV underground cables running to the proposed PAR will cross several 12'-16' deep tunnels that run from the plant to the discharge area. Some are only 5'-6' below grade. Also, the underground termination being installed next to breaker 1450 is the location of one of the tunnels. These may cause interference with installing the proposed cables.	H	M	M				X			
D-16	Design Concern- Jamaica- Lake Success 903 Line Cooling	The project requires forced cooling to be added to the lines to increase their capability. However, the required cooling equipment is not shown on the substation plans. There may not be adequate space at Jamaica station to add the required equipment.	H	M	M		X			X		

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Item #	Risk Title	Description	Probability	Cost Impact	Schedule Impact	T047 Base 1	T048 Base 2	T049 Base 3	T051 Alt 5	T052 Alt 6	T053 Alt 7	Comments
Construction and Operational Concerns												
C-1	Construction Concern - Installing Underground Cables in Existing Substations	Installing underground cables in the existing substations will be difficult without impacting existing foundations, conduit/trench systems, grounding, and buswork. This could require additional or concurrent outages, complex construction sequences, and/or more expensive construction methods.	M	L	L	X	X	X	X	X	X	Number of underground cables being routed through the existing substations include: Barrett - two 138kV cables EGC - two 138kV cables Ruland Rd. - two 138kV cables Shore Rd- one 138kV cable Sprainbrook - one 345kV cable Northport- two 138kV cables
C-2	Construction Concern- Sharp Right Turn	Shore Rd.- New Rochelle- Sharp right-hand turn from Hudson Park Rd. onto Pelham Rd. Also, high traffic area.	M	L	L	X	X	X	X	X	X	Recommend identifying an alternate route for this portion of the line due to this sharp right-hand turn. Possible consideration for routing through Leif Ericsson Park.
C-3	Construction Concern- Railroad Tracks in Use	East Garden City-Tremont: Railroad tracks appear to be in use. If tracks are in service this would potentially require limited amount of working time adjacent to the RR Tracks while the train is moving. This could impact the construction schedule.	M	M	M	X		X	X	X		Recommend confirming whether railroad tracks are in use
C-4	Construction Concern- HDD for Small Retention Pond	East Garden City to New Bridge to Ruland Rd. - Developer proposed trenching across a pond located between Stewart Ave and Broadway.	L	L	L	X		X	X	X		HDD would be more feasible and logical solution. Recommend HDD for small retention pond
C-5	Construction Concern- Length of HDD	The use of HDD across the East River to Tremont is about a mile long. This is approaching the limit of the HDD capability. Being able to use this technique will be dependent on the geological conditions and being able to obtain the necessary cable reels. This impacts lines from East Garden City to Tremont, Barrett to Tremont, and Eastern Queens to Tremont.	M	M	M	X	X	X	X	X	X	
C-6	Construction Concern- Space for Transition Joints from Submarine to Terrestrial Cables.	The below grade transition vaults are to be located in Hudson Park. This is a very active summer recreational area. Therefore, the construction window will be limited.	H	L	L	X	X	X	X	X	X	

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C-7	Construction Concern- Sprain Brook HVDC Substation - Subsurface Condition	Approximately 90% of the site could encounter rock during excavation and the site might require extensive slope protection. Site conditions will require further investigation to quantify. This could have high cost and schedule impact depending on volume of rock excavation and methods used (i.e., blasting likely not allowed in this area)	H	M	L						X	Independent estimate has assumed that rock excavation is required.
C-8	Construction Concerns- HVDC Lead Times	Due to high demand and equipment complexities, manufacturer's are quoting lead times up to 4 years.	H	L	H						X	
C-9	Construction Concerns-East Garden City- 345kV Cables to existing PARs and Transformers	Construction of the underground 345kV cables from the existing PARs and transformers to the proposed substation will be difficult due to having to cross and run parallel with the main cable trench. Also, there will be interference with the existing overhead 138kV 361 and 362 lines, a 69kV line distribution circuit, and communication circuits and their associated poles located along the west side of the substation.	M	L	L	X		X	X	X		
C-10	Construction Concern- Pipe Type Cables	Several 138kV transmission lines that are to be intercepted and tied into a proposed substation are oil-filled, pipe type cables. Tying into these type of cables requires managing the oil pressure and transitioning to EPR (Ethylene Propylene Rubber), which adds an additional level of complexity to the construction. The extent of work required will be dependent on the cable's condition and age.	H	L	L	X	X	X	X	X	X	EGC- Line 462 (Base 1, 2, 3, Alt 5, Alt 6, Alt 7), EGC- Line 463 (Base 1, 2, 3, Alt 5, Alt 6, Alt 7) EGC- Line 465 (Base 2, Alt 7) , EGC- Line 262 (Alt 5)
C-11	Construction Concern- Outages of Existing Facilities	In order to construct the project several existing elements (e.g., transformers, PARs, transmission lines, main busses) will need to be removed from service. Being able to schedule outages can impact the project schedule. Having a single element or multiple concurrent elements out of service can impact the reliability of the system.	M	L	M	X	X	X	X	X	X	Number of elements out of service for 7 days or more: 11 Maximum # of concurrent elements: 2 # of elements out for more than 90 days: 5

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C-12	Construction Concern- East Garden City 138kV Cable Installation	Proposal did not include proposed routes for intercepting the 138kV lines (462, 463, 465 and 262) to the proposed substation. However, due to the extensive underground facilities throughout the yard, along the east side (two 345kV cables, three gas lines (30", 20" 8") and one 138kV pipe-type cable (Line 463) and along the south side (one gas line 30", two 138kV cables 465 and 467, one 69kV cable, and the railroad track) it will be difficult to install the cables. Also along the west and north sides there are overhead 138kV lines, 69kV lines, distribution circuits and communication circuits.)	H	M	M	X	X	X	X	X	X	

Appendix C: Market Monitoring Unit Report

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023





NYISO MMU EVALUATION OF THE LONG ISLAND OFFSHORE WIND EXPORT PPTP REPORT

POTOMAC
ECONOMICS

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Market Monitoring Unit
for the New York ISO

May 2023

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I. EXECUTIVE SUMMARY

The NYISO tariff allows for recovery of the costs of transmission projects that are built to achieve Public Policy Requirements (“PPRs”) from New York State laws or regulations. The tariff requires NYISO to issue a report detailing its evaluation of the proposed projects and identifying which (if any) is the more efficient or cost-effective project for satisfying the Public Policy Transmission Need (“PPTN”). The tariff also requires the Market Monitoring Unit (“MMU”) to “review and consider” any impact on the ISO-administered markets from regulated transmission solutions proposed to satisfy the PPTN, and then the MMU is to provide a report containing its evaluation to stakeholders before the Management Committee advisory vote on the Public Policy Transmission Planning (“PPTP”) Report.¹

In 2019, New York State enacted the Climate Leadership and Community Protection Act (“CLCPA”), which mandates 70 percent of electricity from renewables by 2030, the installation of 9 GW of offshore wind by 2035, and zero emissions from the electricity sector by 2040. In 2021, the NYPSC issued an order identifying the Long Island Offshore Wind Export PPTN and referring it to the NYISO for solicitation and evaluation under its PPTP Process.² The order declared that the CLCPA constitutes a PPR driving a need for transmission to increase export capability from Long Island to the rest of New York State to ensure deliverability of the full output of offshore wind interconnected to Long Island. The order defined the PPTN as:

- 1) Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO’s Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the State; and
- 2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.

The order indicated that the PPTN was driven by the 2030 and 2035 mandates in the CLCPA. It discusses the need for transmission to satisfy the 2035 mandate to install 9 GW of offshore wind assuming that 3 GW would likely interconnect on Long Island.

Developers submitted 19 proposals for satisfying the PPTN. The NYISO found 16 transmission solutions that would satisfy the Viability and Sufficiency Criteria of allowing 3 GW of offshore wind to connect to Long Island without being curtailed. The NYISO performed a study of the costs and benefits of these projects.

¹ See NYISO Market Services Tariff Section 30.4.6.8.5.

² See PSC Case No. 20-E-0497, *In the Matter of New York Independent System Operator, Inc.’s Proposed Public Policy Transmission Needs for Consideration for 2020*, Order Addressing Public Policy Requirements for Transmission Planning Purposes (March 19, 2021).

The NYISO estimated the overnight capital costs and assessed potential development risks and proposed cost caps of each project against the projected:

- Economic benefits from lower electricity production costs,
- Cost savings from reducing investment in (a) renewable generation in upstate areas and (b) dispatchable generation in downstate areas,
- Reduced curtailment of offshore wind generation on Long Island, and
- Other benefits from enhancing the bulk power system such as: expandability of new infrastructure and operability of transmission equipment.

Based on its evaluation, NYISO staff has recommended that the NYISO Board of Directors select Project T051, also known as Propel NY's Alternative 5.

As MMU, we evaluate the market effects of individual projects considering that an inefficient project can harm the electricity markets by distorting energy and capacity prices in the short-term, crowding-out more cost-effective investment, and inflating market risks in the long-term. However, this assessment of projects' economic efficiency must include factors that are not priced in the NYISO markets (such as the degree to which they facilitate renewable energy production). Inefficient projects (i.e., projects whose costs exceed the priced and unpriced benefits they produce) harm the NYISO markets and ultimately raise the cost of satisfying the Public Policy Requirement. This principle is discussed in more detail in Section II. The remainder of this executive summary discusses our evaluation and conclusions. Sections II, III, and IV present our evaluation and Section V provides our conclusions and recommendations.

Quantitative Evaluation Metrics

NYISO staff presented several quantitative and qualitative metrics of the projects' market and reliability impacts and investment costs and outlined how these metrics were considered in its recommendation of Project T051. The following summarizes how we consider the diverse set of metrics and modeling results calculated by the NYISO or derived from its evaluation:

- **Production Cost Savings** – These include reductions in fuel costs, variable O&M costs, CO₂ emissions allowance costs, and other generator production costs across the region. However, the impacts of Renewable Energy Credits ("RECs") on incremental energy offers are excluded from this category and considered separately as discussed below.
- **Avoided Cost of Investment in Dispatchable Generation** that would otherwise be needed to satisfy the minimum resource adequacy and transmission security planning standards.
- **Avoided Cost of Investment in Renewable Generation** that would otherwise be needed to satisfy the CLCPA because of increased deliverability of offshore wind.
- **Transmission Financing and O&M Costs** – It is important to consider the full construction and life-cycle costs of new transmission investments, although the NYISO did not consider these in its evaluation.

- Reduced Curtailment of Offshore Wind – The primary rationale for the Public Policy Requirement was that it would increase deliverability of offshore wind on Long Island.

We include the first four categories above in a single Benefit-Cost Ratio (“B-C Ratio”), which provides an overall measure of the cost of the project relative to the benefits. The benefits are the cost savings that result from satisfying the CLCPA goals with the transmission project versus without it.³ Hence, the B-C Ratio indicates whether the proposed transmission project is a cost-effective means of achieving the CLCPA goals. In addition, we combine the five categories above into another comprehensive metric:

- Implied Net REC (“INREC”) Cost – This is the average cost of increased renewable production resulting from the new transmission project (after netting out the value of wholesale market benefits). This allows us to compare the net cost of a transmission investment to unbottle renewables with other alternatives for supporting higher renewable production, including investing in energy storage that reduces curtailment of renewables or simply building more renewables. Transmission projects are cost-effective when their INREC Cost is lower than these alternatives.

The inputs to the Benefit-Cost Ratio and Implied Net REC Cost are provided on an annual basis to illuminate how the benefits of the project change relative to the levelized costs over the first 20 years of investment. Sections III and IV provide additional details about these quantitative metrics including key differences between our methodology and the NYISO methodology.⁴

Qualitative Evaluation Metrics

In recommending project T051, the NYISO discussed several qualitative benefits including the expandability and operability benefits of a project that adds three 345 kV circuits between Long Island and other zones. Expandability is the degree to which a project may facilitate additional expansion of generation and transmission. Operability is the extent that a project affects flexibility in operating the system, such as access to operating reserves, access to ancillary services, or the ability to remove transmission for maintenance.

While these benefits are material, it is important to quantify benefits in a manner that enables a fair comparison of projects and facilitates competition among developers. Regarding “expandability”, capacity expansion models quantify the impact of proposed projects on other future investments, so the NYISO’s capacity expansion model is designed to quantify the

³ Since the CLCPA goals are achieved with or without the project, the accumulation of RECs is not counted as an additional category of benefit in the B-C Ratio of the transmission project.

⁴ We omit the NYISO’s “Capacity Benefit LOLE Reduction” metric from our evaluation because the NYISO’s methodology for calculating capacity benefits is flawed and because most of the real capacity benefit is reflected in our Dispatchable Generation Investment Cost Savings. While this does not include real capacity benefits of improved reliability, we expect this reliability benefit to be relatively small for this solicitation (because of the reduction in dispatchable generation investment). See our discussion of capacity benefits in Appendix G of the *AC Transmission Public Policy Transmission Planning Report*.

economic value of expandability. As the NYISO refines its capacity expansion model, it should be able to rely less on the “expandability” metric in future studies.

The value of “operability” depends on system conditions, the costs of maintaining security and reliability, and how they are affected by new transmission facilities. Hence, the value of operability is already partially reflected in the production cost savings and avoided cost of investment metrics. Such benefits could be quantified more fully by enhancing the production cost model to account for outages, ancillary services, and other real factors affecting the value of transmission. These enhancements would allow the NYISO to rely more on quantitative measures in future studies, which provide a better basis for comparing competing solutions.

Summary of Assessment of Cost and Benefits

Given the limited time available to review the NYISO evaluation, our review focuses on the NYISO’s Policy + Barrett-VS + P95 Variability Scenario (“Policy+B-VS+P95”). Key features of this scenario include:

- Policy Case offshore wind buildout – This assumes 2.5 GW of Long Island offshore wind is installed by 2030 and 3.7 GW by 2035. This scenario assumes that more than 3 GW of the 9 GW mandated by 2035 would be installed in Long Island.
- The Barrett-Valley Stream constraint – Accounts for the transmission constraint responsible for most offshore wind curtailments through 2035 (rather than assuming the affected wind developer will resolve the constraint or relocate its interconnection point).
- P95 Net Load Variability impact – Assumes some transmission capability between Long Island and other regions will be used to manage intermittent generation variability, thereby reducing available capability for power transfers to and from Long Island. While this scenario approximates these transmission effects, the other scenarios underestimate the offshore wind curtailments that will result from net load variability and uncertainty.

Of the scenarios modeled, the Policy+B-VS+P95 Policy provides the best overall indication of the impacts of the proposed transmission projects. We also limit our review to NYISO’s recommended project (T051) and Project T048 (“Propel NY’s Base Solution 2”) because T048 was the top-tier proposal with the lowest capital costs while retaining much of the benefits of T051. The evaluation of both projects in the Policy+B-VS+P95 Scenario is presented below.

(i) Benefit-Cost Ratio

Based on our recalculation of both benefits and costs, Figure 1 compares the benefits and costs of the projects based on the NYISO assessment and our MMU assessment. Our assessment shows that the combined benefits for the T051 project are substantially less than the costs, yielding a Benefit-Cost Ratio of 0.81 over the 20-year period from 2030 to 2049. “NYISO (P95 Case)” implies higher overall benefits and lower costs. The estimate labeled “NYISO (P95 Case, MMU Discount)” shows that the benefits would be higher if they were appropriately discounted

to 2022 dollars.⁵ Our estimates of benefits and costs differ from the NYISO estimates in several ways, which are explained below (while Section IV provides a more detailed discussion of differences).

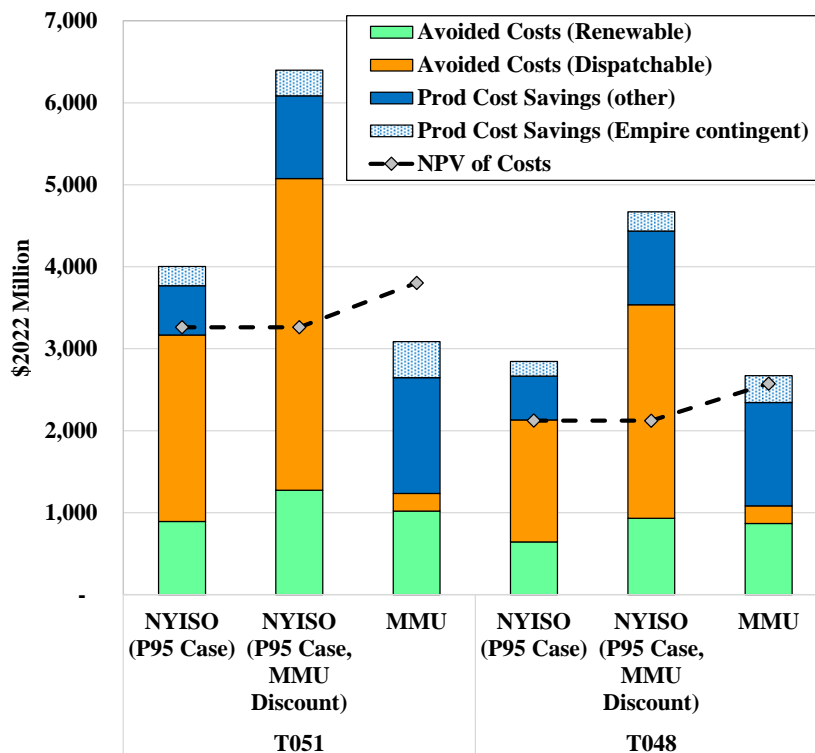
Avoided dispatchable generation.

This accounts for the largest difference in benefit values. We find the NYISO's analysis to be unrealistic in this area.⁶ The NYISO assumes a substantial cost difference for building Dispatchable Emission-Free Resources ("DEFR") on Long Island versus upstate NY.

Therefore, if new transmission reduces the need for DEFRs on Long Island, the need for them can be met by building them upstate. This raises two issues. First, we do not yet know what potential DEFR technologies will exist by 2040, so the costs and characteristics of future DEFRs

are very speculative.⁷ Our estimate assumes that the marginal resource to satisfy future capacity requirements will be a peaking technology that is a lower-fixed cost, higher-variable cost option. Second and more troubling is that such resources cannot reasonably be shifted from Long Island to upstate NY because the transmission network would not support such a shift. Our estimate assumes that the UPNY-ConEd interface between the Hudson Valley and downstate areas would require that the DEFRs remain in downstate NY.

Figure 1: NPV of Benefits and Costs



⁵ We show the NPV of benefits calculated by NYISO for the P95 Case. This is equivalent to the NPV of benefits in the BVS case summarized in Figure 39 of NYISO's report plus the NPV of additional benefits in the BVS P95 Case reported in Figure 32 of Appendix L of NYISO's report. In the "P95, MMU Discount" case we use the benefits estimated by NYISO, but correct for an issue with discounting that causes the NPV presented by NYISO to be understated (see Section IV.A.2).

⁶ Section IV.B discusses the NYISO and MMU estimates of avoided costs of dispatchable generation.

⁷ Indeed, the PSC issued an order in CASE 15-E-0302 on May 18, 2023 inviting comments and announcing a technical conference to discuss what technologies might be considered zero-emissions for purposes of the 2040 mandate. The order solicits comments on the following technologies: advanced nuclear, long-duration storage, green hydrogen, renewable natural gas, and carbon capture and sequestration.

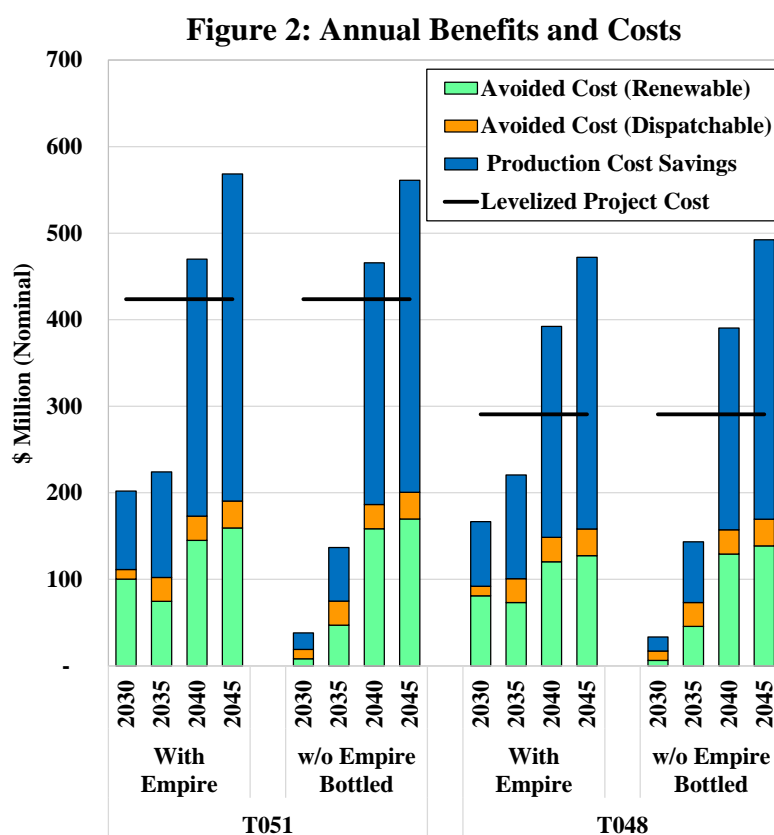
Production Cost Savings. We show larger production cost savings because we adjust for the tendency of the hourly GE-MAPS production cost model to underestimate congestion that occurs under actual market conditions. See Section IV.D.

Cost of Projects. Our calculation includes costs of O&M and financing during construction for the new transmission project. These are major cost elements for each of the new transmission projects and omitting them significantly understates the true costs of the projects.

Taken together, the lower benefits and higher costs in our assessment of the projects accounts for the reduction in the B-C Ratio for T051 of 34 percent. Figure 1 also shows our estimate of the overall Benefit-Cost Ratio of 1.04 for project T048. Our estimated B-C Ratio is higher for T048 (than for T051) because it has much lower capital costs, but only slightly lower benefits. In contrast, the NYISO evaluation of benefits would result in a lower B-C Ratio for T048 than for T051 primarily because it estimates higher avoided costs for dispatchable generating capacity investment for T051 than for T048. Overall, in consideration of the recalculated quantitative metrics, we find that T048 appears to be a more cost-effective project than T051.

The benefits of new transmission vary considerably during the study period, so Figure 2 shows annualized costs and benefits amortized over the first 20 years of investment in 2030, 2035, 2040, and 2045. This is provided for T051 and T048 both with and without the Empire Wind II generator at its proposed point of interconnection. This highlights several key findings. First, the annual benefits from the projects would be very low relative to the annualized costs in 2030 and 2035. The production cost savings rise sharply in 2040 for reasons that we discuss below.

Second, most of the benefits in 2030 are contingent on the status of the Empire Wind II generator. If Empire Wind II does not proceed with construction, builds its own upgrade to become deliverable, or simply moves to a less constrained point of interconnection, most of the benefits would be lost in the initial years of the study period. This highlights the substantial uncertainty associated with these early benefits.



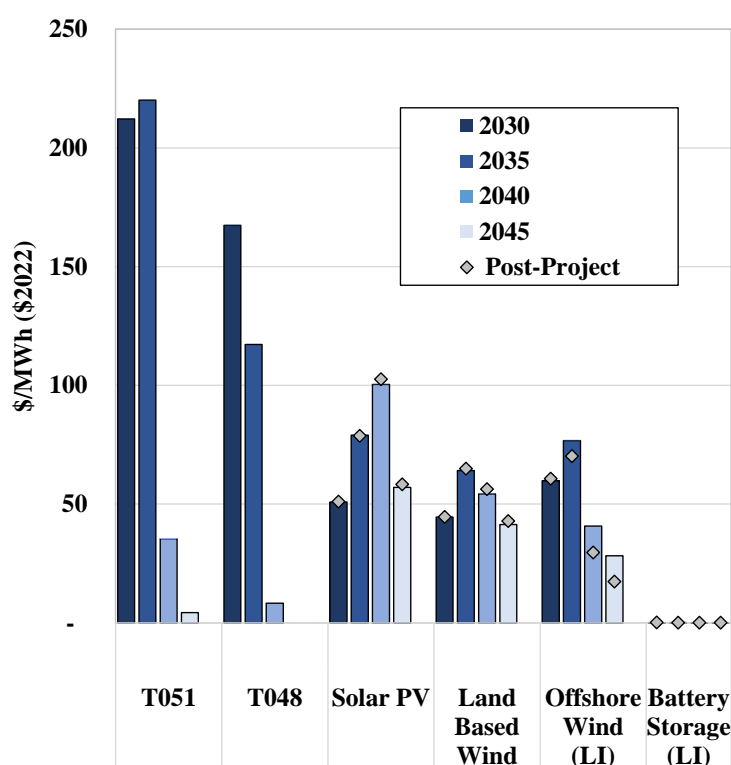
Third, our estimated benefits rise significantly over time making both projects appear cost-effective by 2040 when the State would become much more reliant on Dispatchable Emission Free Resources (“DEFR”). This occurs because DEFRs are assumed to have a relatively high marginal cost (\$150 per MWh) compared to conventional resources. Therefore, every MWh of avoided offshore wind curtailment saves \$150 per MWh in 2040 when DEFRs are assumed to be on the margin. This benefit is extremely uncertain because some zero carbon technologies are likely to be developed that have much lower marginal costs, such as small modular nuclear reactors. A mix of resources could be developed (e.g., carbon capture for conventional resources or green hydrogen technology) with a range of fixed and variable costs. To the extent that the future resource mix relies more on lower variable cost resources, the estimated production cost savings would fall sharply and the B-C Ratio for both projects would likely be less than 1.0 over the entire study period.

(ii) Implied Net REC Cost

This report also estimates the relative costs of producing more renewable energy through alternative investments using the INREC Cost metric. The two proposed transmission investments are the first two alternatives that would facilitate more renewable energy by reducing curtailments. We also estimate the INREC cost for generic alternative investments in renewable generation and battery storage. Since the PPTN is to facilitate the installation of offshore wind on Long Island, we also show the impact of the recommended transmission project on the INREC cost of generic offshore wind on Long Island. Figure 3 shows these estimates every five years during the study period, which highlights several factors. First, the INREC Cost of T048 is significantly lower than that of T051 throughout the period.

Second, the costs of increasing output from renewables by investing in T051 or T048 are significantly higher than the cost of investments in additional renewable resources or battery storage in 2030 and 2035. The transmission projects become more cost-effective by 2040 because of the sharp increase in production cost savings caused by reliance on DEFRs, thereby reducing the INREC Cost of transmission.

Figure 3: Implied Net REC Cost



Third, the INREC Cost of battery storage is less than zero during the study period, indicating that investments in battery storage would be cost-effective even without any compensation for increasing renewable production by reducing their curtailment. This suggests that the NYISO modeled inefficiently low levels of battery storage penetration and that a substantial amount of additional battery storage could be used to reduce offshore wind curtailments on Long Island at a much lower cost than building transmission. However, additional simulations would be needed to determine how much more battery storage penetration would have been cost-effective.

Fourth, the proposed transmission projects have no effect on INREC Cost of generic offshore wind on Long Island in 2030, and only a relatively small effect from 2035 through 2045. This indicates that they would provide only modest benefits in facilitating additional offshore wind.

Hence, we find that increasing renewable generation by investing in one of the proposed transmission projects would provide no significant benefits to generic offshore wind in Long Island in 2030, and the transmission projects would not be cost-effective until after 2035. In 2040, they would only be cost effective if the system would otherwise rely on DEFRs with relatively high dispatch costs as discussed above. If the system does not come to rely exclusively on DEFRs with high dispatch costs, but a mix of technologies evolve including some with moderate to low dispatch costs, the transmission projects would likely remain uneconomic throughout the study period. One of the costs of investing in transmission projects that are not economic is that they tend to crowd-out other more cost-effective investments.

(iii) Reducing Curtailment of Offshore Wind Generation

Without the proposed transmission projects, the Policy+B-VS+P95 Scenario shows 2.5 TWh or 25 percent of Long Island offshore wind curtailed in 2030 and 2.4 TWh in 2035, rising to 4.5 TWh in 2040. The Empire Wind II project accounts for a disproportionately large share of Long Island offshore wind curtailment – 93, 77, and 15 percent in 2030, 2035, and 2040, respectively.⁸ Given that most of the reductions in offshore wind curtailment is of the Empire Wind II project before 2040, the benefits of both projects in the early half of the study period are highly dependent on whether the Empire Wind II facility is built and whether it maintains its currently planned interconnection point. As both projects are well over \$2 billion in total costs, moving the interconnection point or otherwise mitigating the impact of this project would be valuable.

Observations Regarding the Public Policy Transmission Need Defined by the PSC

The New York PSC order defining the PPTN stated that the goals of the CLCPA constitute a Public Policy Requirement. The CLCPA mandates 70 percent renewable generation by 2030, 9

⁸ These values reflect curtailment in the BVS P95 case based on production cost model data provided by NYISO. We estimate the portion attributable to Empire Wind II based on the difference in total curtailment between the BVS and non-BVS policy cases. See also Appendix L of NYISO's report.

GW of offshore wind capacity by 2035, and zero emissions from electricity by 2040. The PPTN order calls for upgrades to local and interzonal transmission between Long Island and neighboring zones to allow up to 3 GW of offshore wind on Long Island to be fully deliverable.

While the PPTN provided no specifics regarding the timing of new transmission investment, the most relevant element of the Public Policy Requirement is the 2035 goal of 9 GW of offshore wind, assuming one-third would interconnect on Long Island. Accordingly, the NYISO's Baseline and Policy Cases model 3.1 and 3.7 GW of offshore wind on Long Island, and a total of 9 and 9.7 GW for the State in 2035. This grows to 6 GW on Long Island and 12 GW statewide in the Policy Case in 2040. The NYISO study includes numerous modeling details that reveal the impact of the proposed transmission projects on satisfying the 2030, 2035, and 2040 goals.

The NYISO analyses suggest that while the proposed transmission projects are cost-effective by 2040 and would help satisfy 2035 offshore wind mandate, they provide little benefit before 2035. In 2030, both T051 and T048 would crowd-out more cost-effective investments in solar PV generation and battery storage, increasing the cost of satisfying the 2030 mandate.

In the initial phase of the study, a large share of the transmission benefits would accrue to the developer of the Empire Wind II project because it would be able to avoid a significant amount of interconnection costs that would otherwise be its responsibility under its long-term PPA with NYSERDA. When transmission expansion is not anticipated until after a contract is awarded to a specific generation developer, the transmission expansion will result in a financial windfall for the generation developer, which could be addressed in the cost allocation.

Finally, it would be beneficial for the NYISO to provide additional information on the costs and benefits of generic potential transmission investments before the PSC determines future Public Policy Transmission Needs. This would be valuable partly because uneconomic transmission investment can crowd out more efficient investment that could achieve the State's policy goals at a lower cost and potentially earlier than large-scale transmission.

Conclusions and Recommendations

The recommended project (T051) fulfills the Public Policy Transmission Need that was defined by the PSC and contributes towards meeting the goals of the underlying Public Policy Requirement of connecting 9 GW of OSW by 2035. However, it would provide little benefit before 2040 and increase the cost of satisfying the 2030 mandate of satisfying 70 percent of load with renewable generation. The T048 project exhibits a significantly higher benefit-cost ratio, but it is similarly uneconomic before 2040.

For example, we estimate both projects to have a benefit-cost ratio close to 0.1 in 2030 if the Empire Wind II project is not built or relocates. Although the benefits rise if the Empire Wind II project proceeds at its current location, the benefit-cost ratio remains well below 1.0 and most of

the added benefits would accrue to the Empire Wind developer since it is already under contract with NYSERDA and the costs and savings of the project will not affect the contract price.

Given the poor economics of these projects in these early years, they would undermine incentives for lower-cost clean energy investments or energy storage that could reduce offshore wind curtailments at a much lower cost. While both T051 and T048 become cost-effective by 2040, the benefits depend on highly speculative assumptions about the costs and operating characteristics of future dispatchable generation investments. The NYISO assumed DEFRs have high capital costs and variable costs, very flexible characteristics, and that they do not withdraw electricity from the power system to generate fuel. However, the estimated benefits would be significantly lower in 2040 if the NYISO assumed that future dispatchable generators:

- Consume surplus electricity to create renewable fuel – If DEFRs are fired by fuel synthesized from surplus renewable output that would otherwise be curtailed, it would reduce the estimated benefits of the transmission projects.
- Have lower variable production costs – The NYISO assumes DEFRs will have high capital costs (with large regional variations) and high variable costs. If technologies emerge with lower variable costs, the sharp increase in benefits in 2040 and beyond will be reduced or eliminated.

Ultimately, the proposed transmission projects are not estimated to be helpful for satisfying the 2030 mandate and they would make relatively modest contributions toward satisfying the 2035 mandate. Furthermore, the majority of the benefits of new transmission over the study period depend on the future costs and characteristics of DEFRs, which will likely be clarified in the coming years. In addition, investment in storage could be used to satisfy the 2030 and 2035 mandates more cost-effectively if it is not crowded-out by the new transmission. Given the estimated investment lead time of around six years and small benefits before 2040, it is premature to move forward with a capital-intensive transmission project at this time. These results support the following conclusions and recommendations:

- It is not advisable to move forward with one of the proposed transmission projects at this time given the magnitude and timing of the potential benefits. This process could be re-initiated in future years if warranted.
- If the NYISO determines that it must or should select a project, we recommend that it reconsider its recommendation of T051 since it does not appear to be the most cost-effective project.
- We recommend that the NYISO provide initial estimates of costs and benefits of generic potential transmission solutions to the PSC to inform future PPTN determinations.

In addition to these recommendations, we identify recommended improvements to the NYISO's evaluation process and analysis in Section IV. In general, we found the NYISO's methodologies



Executive Summary

for this assessment are reasonable. However, we identify several methodological enhancements for NYISO to consider in future public policy transmission evaluations.

A complete set of recommendations is provided in the Section V of this report.

II. PRINCIPLES FOR THE EVALUATION OF MARKET EFFECTS OF PROJECTS

The purpose of the PPTP process is to identify transmission investments that would provide significant public policy and wholesale market benefits. However, it is critical for the PPTP process to function in a manner that supports the NYISO's competitive wholesale markets. This section discusses the principles we use for evaluating the qualitative and quantitative benefit metrics against the estimated costs of proposed projects and ensuring that the PPTP process does not undermine the wholesale market.

Transmission upgrades can provide many wholesale market and public policy benefits to the system, including:

- Increasing the utilization of low-cost generation, which lowers production costs; and
- Satisfying public policy objectives, such as reducing environmental emissions by facilitating increased development and dispatch of lower-emitting resources.

To assess the value of a proposed transmission project, it is important to fully quantify these benefits to determine whether the project is efficient.⁹ The NYISO's economic transmission planning process does not consider several key wholesale market benefits and public policy benefits. This is partly why no transmission project proposal has ever been deemed to be cost-effective in the economic planning process. The PPTP process allows the NYISO to consider additional benefits for a more complete assessment of whether a proposed project is efficient.

In Section III.A of this report, we discuss a framework for quantifying the different categories of wholesale market and public policy benefits. This framework includes cost savings, reliability benefits, and environmental impacts that assist in evaluating the impact on wholesale electricity markets from the proposed projects. Section III.B provides the results of the Benefit-Cost Ratio metric which indicates whether the proposed project would enable policy mandates to be met at a lower overall cost than alternative investments. In addition, the Implied Net REC Cost is calculated for each investment to determine whether the recommended project is more cost-effective in increasing the deliverability of renewables than alternative clean energy investments.

Although reducing transmission congestion will always produce benefits, these benefits must exceed the costs of the transmission project to conclude that the project is efficient compared with alternative investments. Inefficient transmission investment can distort wholesale prices, crowd-out efficient private investment, and ultimately increase the cost of satisfying public policy objectives.

Therefore, our criteria for determining that a public policy transmission project is efficient for purposes of this evaluation is: *the benefits of the project exceeds its costs*. For projects that are

⁹ We recognize that some of the public policy benefits are subjective and may not be quantified easily.

effective in facilitating renewable generation, this generally occurs when the Implied Net REC Cost of transmission is lower than alternative clean energy investments.

Projects that do not satisfy this general principle will undermine the markets and ultimately raise costs to consumers in New York. Therefore, we evaluate the costs and benefits of each of the proposed projects, which includes a review of the assumptions used to estimate the projects' benefits. We then apply this principle to determine whether the project recommended for selection by the NYISO would adversely affect the NYISO's wholesale electricity markets.

III. EVALUATION OF PROPOSED TRANSMISSION PROJECTS

The NYISO presented several quantitative and qualitative metrics of the impacts and costs of each project and outlined how these metrics were ultimately considered in its recommended selection of Project T051. While estimates of cost and economic value are relatively straightforward to interpret, it can be difficult to evaluate metrics that are either qualitative or quantified in non-dollar terms. This section discusses: (i) our approach to quantifying the economic, environmental, and reliability benefits that would be provided by each project; (ii) the results of the evaluation; and (iii) a discussion of the other quantitative benefits of the each project.

A. Metrics for Evaluating Costs and Benefits

The NYISO employed a diverse set of metrics for satisfying the PPTN, which can be used to derive the economic, environmental, and reliability benefits that would come from the recommended transmission projects. The principle quantitative benefits include:

- *Production Cost Savings* – the projects are expected to reduce system production costs by relieving transmission congestion, allowing lower-cost resources to serve load. For the Long Island PPTN, production cost savings result both from unbottling offshore wind generation on Long Island and from allowing more energy imported from upstate to displace higher-cost generation on Long Island. The incremental production cost savings from unbottling Empire Wind II are reported separately.
- *Avoided Cost of Investment in Capacity Needed for Reliability* – Projects increase transfer capability into Long Island, potentially reducing the amount of generation capacity that must be maintained there to satisfy reliability criteria. This may result in cost savings if the PPTN projects allow capacity needed to satisfy the state’s Installed Reserve Margin to be built in lower-cost upstate areas instead of higher cost downstate ones.¹⁰
- *Avoided Cost of Investment to Satisfy State Policy Goals* – New York’s electric sector is required by law to be 70 percent renewable by 2030 and 100 percent zero-emissions by 2040. To meet these targets, many renewable generation investments will be required in addition to the mandated 9 GW of offshore wind. By reducing curtailment of offshore wind, the PPTN projects would reduce the amount of renewable capacity or RECs the state will need to procure from other sources in order to meet its targets. This approach captures the climate policy benefits of the PPTN projects because it indicates how much they will reduce the cost of achieving the 2030, 2035, and 2040 mandates compared to

¹⁰ In our report on the previous PPTN evaluation for the AC Transmission Projects, we also recommended that NYISO quantify the benefits of more reliable service. We recommended measuring this as the reduction in loss of load expectation (LOLE) provided by the projects, valued at the cost of obtaining the same reliability improvement in the capacity market. The NYISO performed an analysis of the projects’ LOLE reduction benefit (Appendix M of NYISO’s report), but the NYISO’s analysis includes key methodological flaws, such as beginning from a base case system set to at-criteria (i.e., LOLE equal to 0.1 days per year) conditions instead of a level that would be consistent with its modeled conditions. Nevertheless, we expect that the LOLE benefits from the proposed projects would be relatively small in this solicitation (if estimated appropriately).

alternative means.¹¹ The portion of avoided costs that are contingent on unbottling Empire Wind II are reported separately.

The three benefits above can be added together to estimate a total project benefit encompassing economic, reliability, and public policy value in dollars terms. We also evaluated the following key project benefits that are not directly additive these:

Offshore Wind Curtailment Reduction – This is a key benefit because reducing offshore wind curtailment is the stated purpose of the PPTN. It should be noted that the value of reduced curtailment is effectively contained in the economic benefit metrics described above. This is because the value of increased deliveries of offshore wind lies in (1) lower production costs, and (2) public policy benefits in the form of increased zero-emissions generation that would otherwise need to be procured from another source. Hence, a benefit-cost analysis based on the three principle benefits described above implicitly values the degree to which the proposed projects successfully achieve the PPTN.

Implied Net REC Cost – The PPTN process is designed to identify transmission investments that advance New York State policy goals. There are many potential transmission, generation, and storage projects that can contribute to New York’s clean energy targets. NYISO markets indicate the value of competing solutions and provide incentives for the most efficient projects to come forward. To avoid crowding-out more cost-effective solutions, an efficient PPTN solution should advance Public Policy Requirements (such as an increase in offshore wind energy or total clean energy) at lower cost than other generic investments that provide comparable contributions towards those goals. The Implied Net REC Cost metric assesses the efficiency of the proposed transmission projects by quantifying the net cost per unit of renewable energy it provides.

B. Evaluation of the Proposed Public Policy Transmission Projects

We have reviewed results of modeling performed by NYISO for the recommended project. We modified these results to account for key factors affecting project benefits and costs that NYISO did not consider in its evaluation, discussed in detail in Section IV. Using these results and the project costs presented in the NYISO report, we compared total expected benefits of the T051 project to its total costs. In addition, we also evaluate the benefits and costs of Project T048 because it was the lowest-cost project among the top-tier. This subsection discusses the results of our benefit/cost analysis and compares it to NYISO’s results.

Figure 4 and Figure 5 show our estimated benefits and costs for projects T051 and T048 over the 20-year evaluation period. Project costs are shown on a levelized basis. Overall, we estimate

¹¹ While the NYISO quantified CO2 emissions reductions resulting from the projects, the results are not impactful in this evaluation because the NYISO system is assumed to reach a state of zero emissions with or without the PPTN projects. Hence, the climate policy benefits of the PPTN projects stem from their ability to help achieve the zero emissions target at lower cost than if they were not built.

that T051 would produce benefits significantly below its costs until the late 2030s, when benefits would begin to exceed costs. On the other hand, we estimate that T048 would begin to produce benefits consistent with its costs two years earlier.

Figure 4: MMU Estimated Annual Benefits and Costs of T051 Project

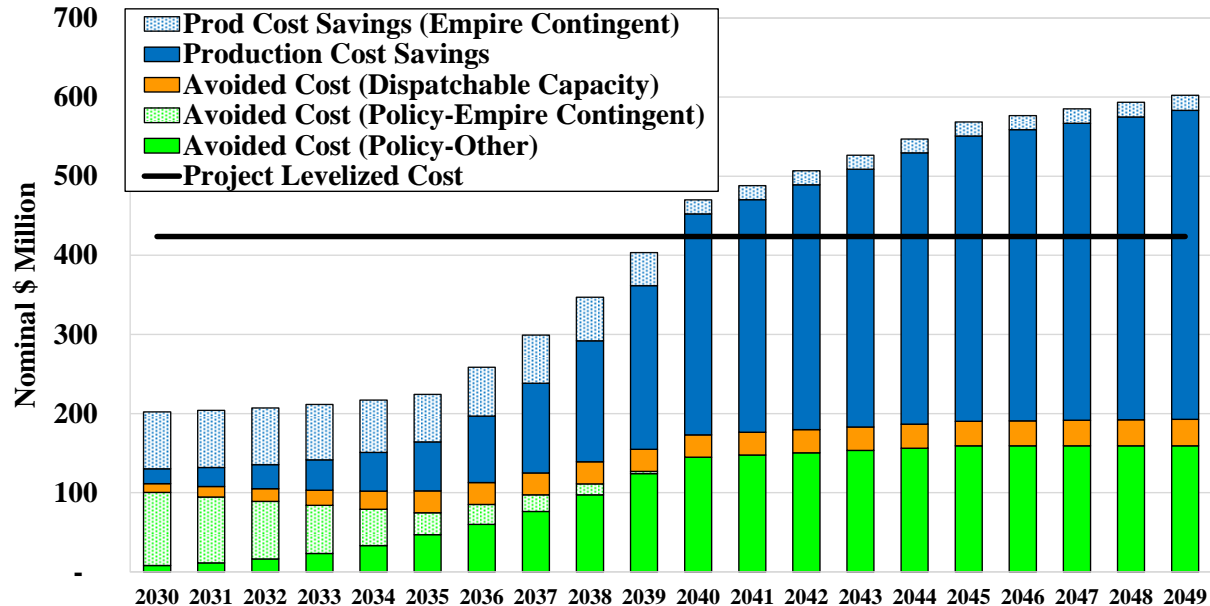
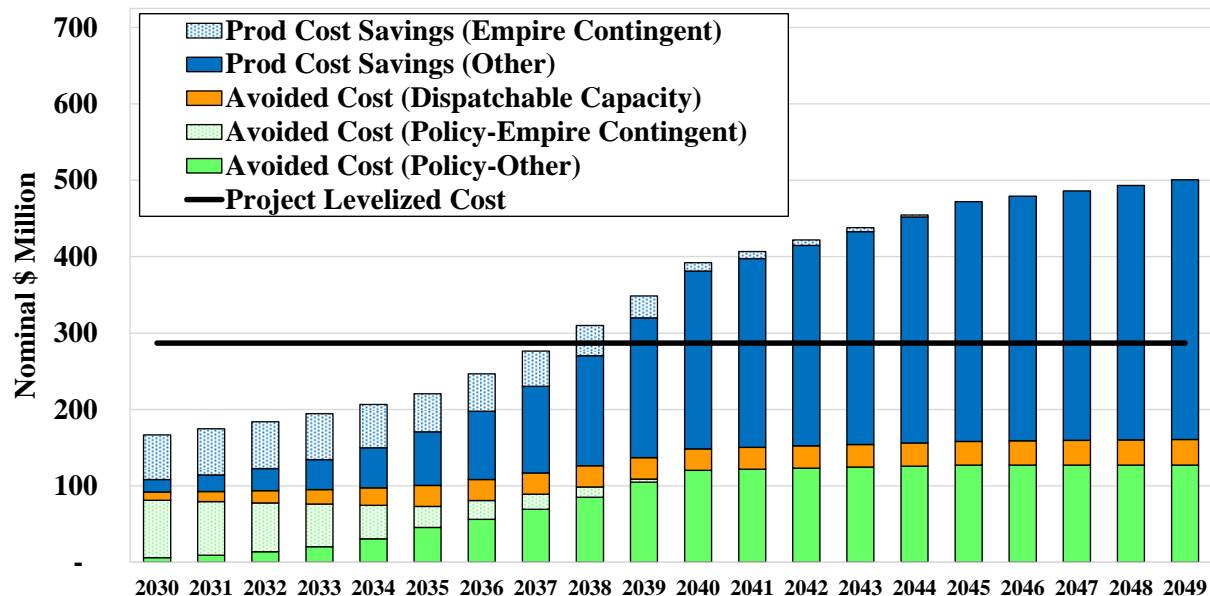


Figure 5: MMU Estimated Annual Benefits and Costs of T048



Production cost savings are the largest source of long-term benefits for both projects. For the first five years of the evaluation period, these would be expected to be come mainly from reducing curtailment of the planned Empire Wind II offshore wind facility by reducing

congestion on the Barrett – Valley Stream 138 kV line.¹² The developers of Empire Wind II recently rejected transmission upgrades identified in NYISO’s interconnection process that would have increased its deliverability, with an estimated capital cost of \$265 million. The NYISO did not evaluate whether the Empire Wind II interconnection upgrades alone would have achieved the PPTN’s goal of allowing 3 GW of offshore wind to be deployed on Long Island.

In the long-term, production cost savings are expected to increase because of: (1) assumed deployment of 6 GW of offshore wind on Long Island by 2040 in NYISO’s policy case, and (2) a large increase in the cost of dispatchable energy as existing fossil units are replaced by dispatchable emissions free resources (“DEFERs”). DEFERs are assumed to have much higher variable costs than conventional generation. Because DEFERs are unknown technologies with assumed costs, the production costs savings later in the study period are highly uncertain.

Overall, our estimates of the NPV of benefits are significantly lower than the NYISO estimates. This is primarily because NYISO’s evaluation did not adequately consider key factors that would limit the avoided capacity investment costs of the proposed projects. Notably, NYISO did not evaluate whether upstream transmission bottlenecks would limit the amount of generation capacity that could be held in upstate New York instead of Long Island. In our evaluation, we found that nearly all of the avoided capacity investment benefit estimated by NYISO cannot be realized without upgrading key upstream constraints that are not addressed by the PPTN projects.

We estimate a higher NPV of production cost savings and avoided public policy costs than NYISO after we adjust for aspects of NYISO’s modeling that are likely to understate them. Our changes include (i) an adjustment to account for the general downward bias in production costs estimated using hourly production cost models such as GE MAPS, and (ii) inclusion of fixed O&M and local transmission upgrades in the avoided costs of renewable investments. We also include estimated life cycle O&M costs of the proposed transmission projects, which NYISO did not include in its NPV estimates. As a result, we find that the recommended project (T051) has an expected Benefit-Cost Ratio of 0.81, while the lower-cost alternative (T048) has a B-C Ratio of 1.04. It is important to note that these estimates include the project’s contribution to meeting New York’s clean energy goals, which are quantified through the avoided policy savings benefit.

The long-term benefits of the recommended project and our preferred alternative are highly uncertain, especially in the years following the state’s zero emissions electricity mandate. This is because the production and investment cost savings estimated by NYISO are primarily driven by the avoided cost of building and producing energy from DEFERs, a technology that is currently unspecified. Additionally, the NYISO did not thoroughly analyze key factors affecting project benefits, including the impact of upstream transmission constraints and the impact of operating reserve requirements on production cost savings.

¹² We estimated the production cost savings attributable to unbottling of Empire Wind II as the difference in savings between NYISO’s GE-MAPS cases with and without the Barrett-Valley Stream constraints modeled.

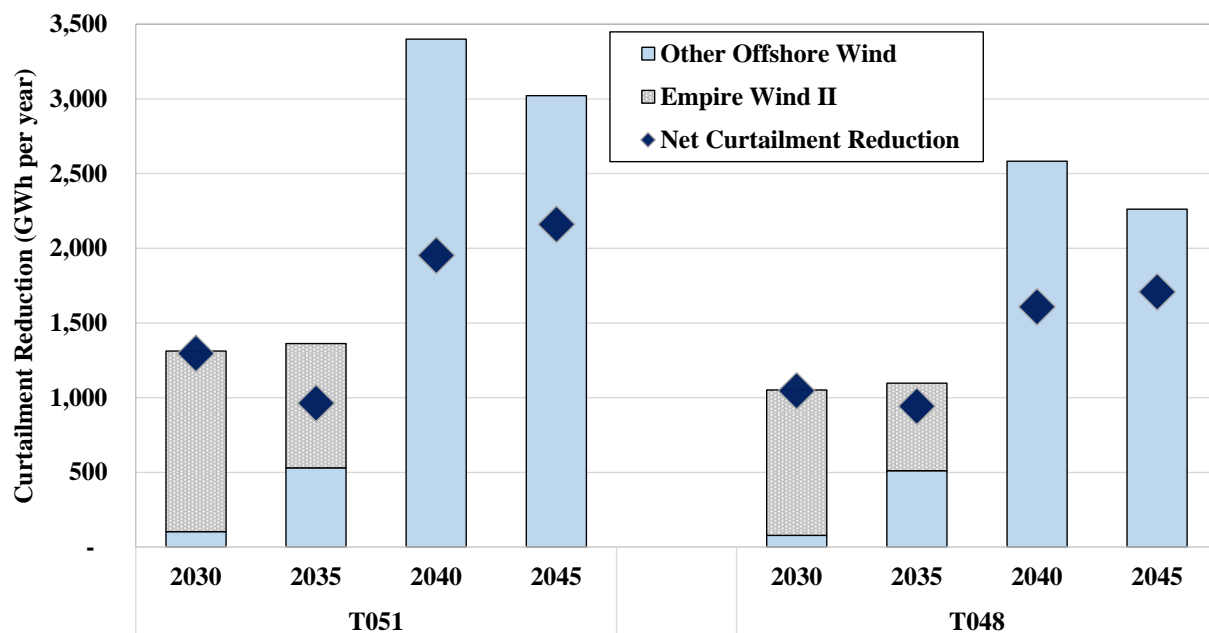
C. Other Quantitative Measures of Impact

This subsection discusses results of benefit metrics that complement the benefit-cost ratio presented above.

1. Offshore Wind Curtailment

Figure 6 summarizes the T051's impact on annual renewable curtailment based on NYISO's GE MAPS results.¹³

Figure 6: Impact of Projects on Curtailment of Offshore Wind and Other Renewables



In NYISO's 2030 and 2035 cases, the vast majority of offshore wind energy unbottled by T051 results from relieving congestion on the Barrett-Valley Stream facility limiting output from Empire Wind II, instead of from expanding Long Island's export capability. T051 partially resolves the constraint affecting Empire Wind II, which experiences 46 to 49 percent curtailment in the pre-project case and 19 to 21 percent curtailment in the project case. In 2040 and beyond, T051 is expected to eliminate more curtailment because of the assumed deployment of 6 GW of offshore wind on Long Island. T048 exhibits somewhat smaller impacts on curtailment of offshore wind over the study period.

¹³ The height of the bars in Figure 6 reflect the total difference in offshore wind curtailment between the base and project case versions of NYISO's Policy Barrett-Valley Stream CRM Case MAPS simulations. Net curtailment is calculated as the difference in offshore wind curtailment less the difference in curtailment of land based wind, solar, hydro and hydro imports in NYISO. We estimate the portion of avoided curtailment attributable to Empire Wind II based on the increase in avoided curtailment in the Barrett-Valley Stream case compared to the case in which this constraint is not modeled, using data reported in Figures 8 and 9 of Appendix L of NYISO's report.

Beginning in 2035, the offshore wind unbottled by the T051 project causes curtailment of other renewable resources (including wind, solar and hydro) in other parts of the state. Approximately one-third of the offshore wind unbottled after 2035 causes curtailment of other renewable resources.¹⁴ We use this ‘net’ impact on curtailment to calculate the Implied Net REC of the proposed projects below.

2. Implied Net REC

The Implied Net REC (“INREC”) Cost is the average cost of increased renewable production resulting from the new transmission project (after netting out the value of wholesale market benefits). This is used to compare the net cost of a transmission investment to unbottle renewables with REC program costs and/or the net cost of energy storage projects that reduce curtailment of renewables. When the INREC Cost is lower for a transmission project than for competing investments in renewable generation or battery storage, the transmission project is cost-effective. However, if the INREC Cost is higher, then the transmission project is likely to crowd-out other more economic clean energy investments.

Figure 7 compares the estimated INREC Cost of the T051 and T048 projects over the evaluation period to alternative investments in renewables.¹⁵ The T051 and T048 INREC Costs are estimated using the benefits and net curtailment reductions discussed above. The INREC Costs of renewables and storage are estimated using NYISO’s policy base case, which does not include the proposed transmission projects.¹⁶ NYISO did not model local transmission constraints in upstate regions that would impact energy deliverability and revenues of renewables there, so we include in the renewable INREC cost the estimated cost of local transmission upgrades based on

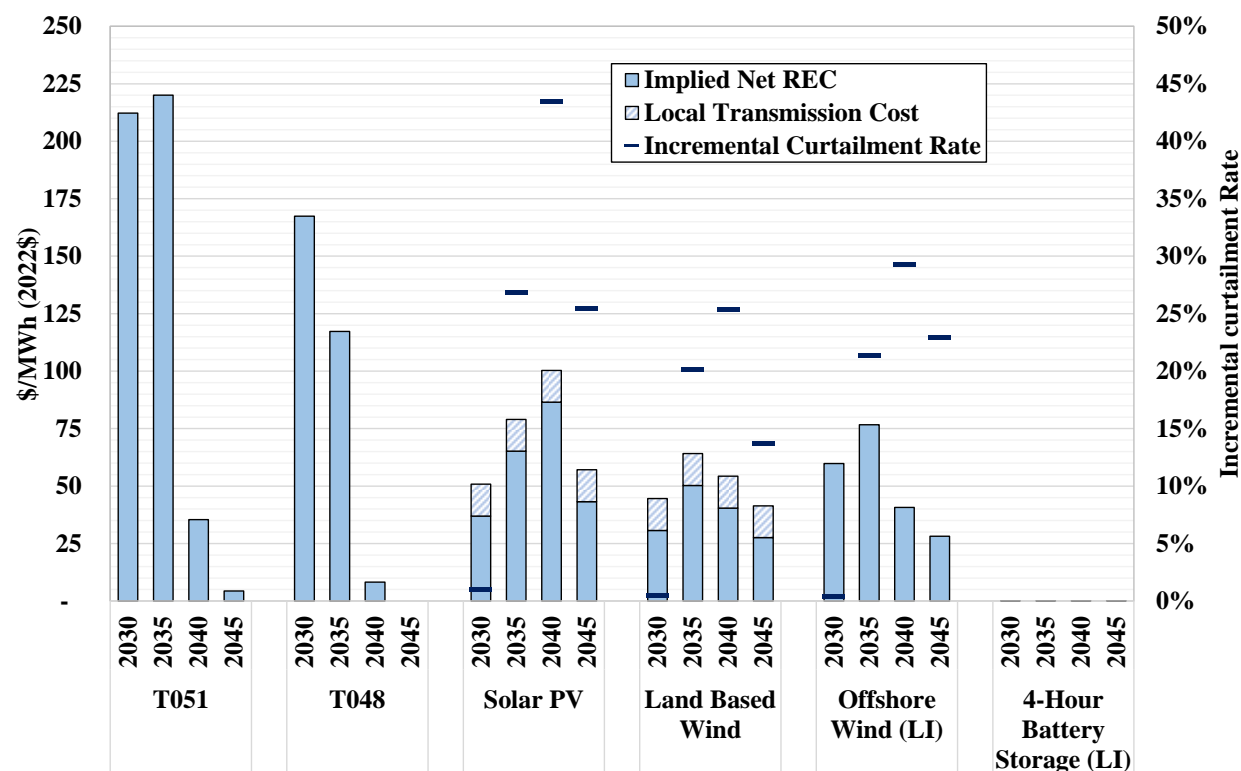
¹⁴ This finding is based on data for the BVS P095 case provided by NYISO. See also figures 18 and 19 of Appendix L of NYISO’s report.

¹⁵ The INREC cost of the transmission project is estimated as its levelized cost net of annual production cost savings and avoided capacity investment benefits, divided by the annual net reduction of renewable curtailment it provides. The INREC Costs of renewables are estimated as the levelized cost per megawatt of an additional unit of that technology net of estimated market revenues in the production cost model base case, divided by the annual net increase in renewable generation it provides (e.g. its annual output excluding hours when the resource would be curtailed or cause another renewable resource to be curtailed). The INREC cost of storage is estimated as the levelized cost of a 1 MW, 4 Hour battery on Long Island net of expected energy, ancillary services and capacity revenues, divided by the incremental MWh of renewable energy the battery would provide each year by charging to reduce renewable curtailment. Since this is a comparative metric of the cost of procuring a REC, we exclude avoided policy investment costs (which are equivalent to avoided REC costs) from the calculation of the PPTN project INREC Cost and exclude the negative portion of LBMPs from the calculation of renewable and storage INREC Costs.

¹⁶ We exclude federal ITC and PTC incentives when calculating the levelized cost of renewables, so that the INREC cost represents the total social cost of obtaining a REC. We calculate INREC Cost for a land-based wind project in Zone C and the average of solar PV in zones C and F.

projects recently approved by the NYPSC.¹⁷ We also show the incremental curtailment rate of each renewable resource, which is considered in the INREC calculation. For example, an additional offshore wind project on Long Island in 2035 would face curtailment of 21 percent of its output, and the INREC cost of its remaining deliverable energy after accounting for this curtailment is \$75 per MWh.

Figure 7: Implied Net REC Cost of T051, T048, and Generic Investments



The INREC cost of T051 is initially very high (~\$212 per MWh in \$2022 in 2030) because it has low expected economic benefits relative to its costs during that period. This indicates that T051 is a very costly means to increase the supply of renewable energy during this period compared to investing in additional renewable capacity, even after accounting for partial curtailment of the renewables. The INREC Cost of T048 is significantly lower but remains higher than other technologies until around 2038. In 2040 and beyond, the INREC cost of the proposed transmission projects falls rapidly because it is projected to provide much greater production cost benefits (reducing its net cost) and reduce more offshore wind curtailment. This suggests that

¹⁷ See February 16, 2023 *Order Approving Phase 2 Areas of Concern Transmission Upgrades* in NYPSC Docket 20-E-0197. We estimate local transmission costs based on the levelized value of the estimated \$4.4 billion cost of the approved Phase 2 upgrades divided by the 30,332 GWh of energy deliverability headroom they are expected to provide. There is still significant curtailment of renewables in NYISO's model results because of the presence of inter-zonal high voltage bottlenecks, but this is already reflected in the INREC Cost calculation through the incremental curtailment rate.

T051 would not be a cost-effective way to increase the supply of RECs (compared to investing in additional renewable capacity) until 2040.

We calculate an INREC Cost of \$0 per MWh for storage on Long Island in NYISO's Policy Case. This suggests that it would be economic for additional storage to enter the market and reduce curtailment of offshore wind by charging to absorb curtailed wind energy.¹⁸ In the pre-project case, an incremental megawatt of battery capacity with 4- or 8-hour duration would reduce curtailment by approximately 979 to 1,819 MWh per year if located at the Barrett substation, or 430 to 670 MWh per year by 2035 and 762 to 1,343 MWh per year by 2040 if located elsewhere on Long Island.¹⁹ The net cost of batteries is low because of high energy and capacity revenues in the Policy Case, even after accounting for declining marginal capacity value of storage. These results suggest that both the T051 and T048 projects may crowd out storage investments that could more cost-effectively reduce curtailment of offshore wind.

¹⁸ This may also indicate that the NYISO's capacity expansion model is building less than the optimal amount of battery storage capacity. This may be due to the tendency of storage resources to profit from price volatility and the difficulty of modeling price volatility in the NYISO's capacity expansion model, which models time in larger chunks than an hourly or interval-level model.

¹⁹ We estimate incremental avoided curtailment a storage unit could provide using GE-MAPS data provided by NYISO. Storage is assumed to reduce curtailment when it would economically charge during hours where the LBMP is zero or less.

IV. KEY ASSUMPTIONS USED TO ESTIMATE BENEFITS AND COSTS

This section discusses key assumptions used in the NYISO's estimates of the costs and benefits of the proposed projects. We also discuss several factors that were not considered in the NYISO's estimates. Ultimately, we find that the overall effect of addressing these factors would likely be a significant reduction of the overall benefit-cost ratios for the recommended projects. We recommend the NYISO address these issues in future evaluations.

Subsection A discusses the estimation of individual transmission project costs. Subsection B addresses the NYISO's assumptions regarding avoided costs of dispatchable generation needed for reliability. Subsection C addresses NYISO's estimate of the avoided cost of satisfying state policy mandates. Subsection D evaluates the assumptions used in the production cost simulation model.

A. Factors Affecting Transmission Investment Costs

This section reviews the NYISO's approach to estimating project costs and describes alternative assumptions used in our analysis.

1. Exclusion of Operating and Maintenance Costs and AFUDC

NYISO's evaluation considered only the proposed projects' overnight capital costs. It did not consider operating and maintenance (O&M) costs or allowance for funds used during construction (AFUDC), which can significantly affect a transmission project's total life cycle cost.²⁰ For example, in the last PPTN evaluation (the AC Transmission Projects evaluation completed in 2019), data provided by the NY Department of Public Service and the Brattle Group indicated that O&M costs would add approximately 39 percent to the net present value of the project's costs over a 45-year period and AFUDC would add over 9 percent.²¹

In our evaluation, we accounted for AFUDC by assuming funds will be committed for an average of two years (based on construction timelines estimated by NYISO's independent consultant) at a real weighted average cost of capital of 5.1 percent, resulting in a 10.5 percent increase in the project's capital cost above the overnight estimate in real terms.

Estimating O&M costs is challenging in the absence of information provided by developers. It is likely not possible to extrapolate O&M estimates used in the AC Transmission process, which reflected projects consisting mainly of overhead lines in upstate New York. A large portion of the T051 and T048 projects consist of new underground and submarine transmission cables,

²⁰ See section 3.2 of NYISO's report.

²¹ See slides 4 and 5 of the Brattle Group's October 8, 2015 presentation on *Benefit-Cost Analysis of Proposed New York AC Transmission Upgrades* in NYPSC Case 12-T-0502.

which have different maintenance profiles compared to overhead lines. Based on the O&M costs reported per circuit-mile of underground lines and per substation in FERC Form 1 filings of downstate utilities, we conservatively estimated annual O&M costs to be approximately 0.5 percent of overnight capital costs for the T051 and T048 projects. However, we recommend that the NYISO estimate these savings as part of its evaluation in future PPTP evaluations.

2. Capital Costs and Discounting

NYISO considered two estimates of the overnight cost of each project: one based on the voluntary cost cap submitted by each developer, and one developed by NYISO's independent consultant. For the T051 and T048 projects, NYISO estimated overnight capital costs of \$3.26 billion and \$2.12 billion by adjusting the developer's cost cap using the independent consultant's estimate. These costs are expressed using 2022 prices.²²

It is important to discount costs and benefits that take place at different times in a consistent manner. NYISO's evaluation used the following parameters and assumptions: (1) the project is assumed to enter service in 2030, (2) benefits are evaluated over a 20-year time horizon (2030 to 2049), (3) benefits are discounted using a 7.1 percent discount rate intended to reflect a regulated utility cost of capital, and (4) all values are presented in 2022 dollars. NYISO discounted project benefits to 2022 using the 7.1 percent discount rate, instead of discounting to the initial year of the evaluation period (2030). For production cost benefits, NYISO estimated savings at five year intervals (2030, 2035, 2040, and 2045) and assumed that savings are the same in nominal terms between intervals (e.g. the same value for 2030 through 2034).

In our evaluation, we discount future benefits to 2030 using NYISO's 7.1 percent discount rate. We apply a 2 percent annual inflation escalator to NYISO's 2022\$ capital cost estimate to estimate its nominal cost in 2030. We express annualized project costs as a levelized value over 20 years based on the cost estimate as of 2030. Hence, project costs and benefits are uniformly discounted to the same date. We present our results in 2022\$ by applying a 2 percent annual inflation deflator to 2030 present values. We also interpolate production cost savings benefits for years between model run years. In Figure 1, we calculate the NPV of benefits estimated by NYISO using this discounting approach, so that the NYISO's benefit-cost ratio can be compared directly to ours.

B. Avoided Cost of Investment in Dispatchable Capacity Needed for Reliability

The proposed transmission projects would increase transfer capability into Long Island, potentially reducing the amount of capacity needed in Long Island and other downstate areas to maintain reliability. In the long term, this would reduce system costs by allowing peaking capacity to be built or maintained in upstate areas where it is less expensive instead of Long

²² See section 3.2 of NYISO's report.

Island. In NYISO's evaluation, this is the largest benefit of the T051 and T048 projects and accounts for the majority of their values on a NPV basis.²³

We identify two flaws in NYISO's evaluation that cause the avoided cost of capacity benefits of T051 and other proposed projects to be significantly overstated. First, NYISO did not consider whether upstream transmission constraints not addressed by the projects would limit the impacts on Long Island's capacity requirements. Second, NYISO adopted speculative assumptions regarding the cost of future peaking plants that result in extremely high cost savings for each megawatt that can be shifted from Long Island to upstate. We discuss these flaws below.

1. Effect of Upstream Transmission Constraints

NYISO quantified the increase in potential transfers into Long Island provided by each proposed PPTN project. NYISO then assumed that an amount of capacity proportional to this increase can be held in upstate New York instead of Long Island if the project is built.²⁴ This analysis is incomplete because NYISO did not evaluate whether upstream constraints other than those directly upgraded by the project would limit the ability to remove capacity from Long Island in a resource adequacy planning assessment.

Shortcomings of NYISO's Approach

NYISO estimated the PPTN projects' impacts on the Long Island capacity requirement by replicating only one component of its methodology to determine Locational Capacity Requirements (LCRs). NYISO determines LCRs each year so that the capacity market will procure enough supply in each region to satisfy reliability criteria, considering major transmission bottlenecks and the cost of new supply in each area. NYISO's LCR Optimizer process determines LCRs using GE-MARS, a probabilistic model that considers the ability of the transmission system to move power throughout the entire NYCA region during peak conditions. NYISO also calculates minimum LCR floors based on Transmission Security Limits (TSLs), which consider contingencies that would affect transfers on facilities directly into each region. The LCR is the higher of the values determined by the Optimizer and TSL approaches.

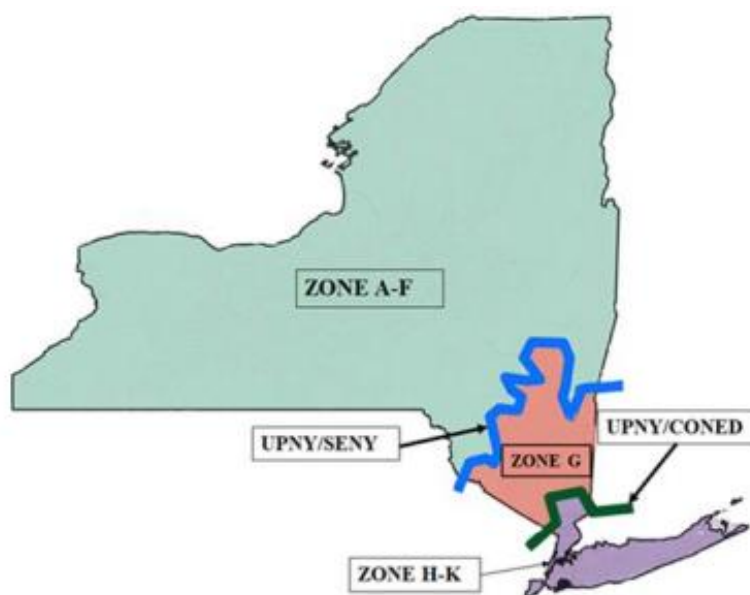
NYISO's evaluation determined that the PPTN projects would cause the TSL-based requirement in Long Island to fall by adding new transfer capability directly onto the island from nearby areas. The proposed PPTN projects are generally designed to increase the transfer capability between Long Island (Zone K) and the Con Edison service territory in Westchester County (Zones H and I). Some projects, including T051, also upgrade transfer capability between Long Island and New York City (Zone J).

²³ See Figures 38 and 39 of NYISO's report.

²⁴ See Appendix N of NYISO's report.

NYISO assumed without any analysis that the LCR in Long Island will fall by the same amount as the reduction in its TSL-based requirement. This ignores the fact that the LCR Optimizer considers many other transmission constraints that may limit flows between the upstate region and Long Island. If upstream bottlenecks restrict the ability of additional upstate capacity to serve downstate New York, an increase in the transfer limit to Long Island from other downstate areas will not allow more capacity to be held upstate unless those upstream constraints are also upgraded.²⁵ Figure 8 below shows a simplified representation of the location of key constraints impacting flows between upstate and downstate New York.

Figure 8: Illustration of Upstream Transmission Constraints



These constraints include the UPNY-CONED constraint (between zones G and H) and the UPNY-SENY constraint (between zones A through F and zone G). The proposed transmission projects would increase transfer capability between Long Island and other zones within the H-K group, but none of them would increase transfer capability across UPNY-CONED or UPNY-SENY interfaces. However, (though NYISO did capture these interface limits in the capacity expansion and production cost models) the NYISO did not use its resource adequacy model to

²⁵ NYISO used a zonal capacity expansion model that includes upstream transmission limits. However, the presence of these constraints in the capacity expansion model does **not** allow it to usefully quantify their impact on zonal capacity requirements. The capacity expansion model is not designed to determine capacity requirements internally. It uses an average load forecast and groups hourly load and resource availability into multi-hour “time slices” that average across multiple hours, so it does not simulate probabilistic hourly net peak load conditions affected by load forecast uncertainty as is done in a resource adequacy model such as GE MARS. Capacity requirements derived from MARS are driven by the individual hours of highest load, greatest resource unavailability and load forecast uncertainty. Hence, NYISO’s capacity expansion tool simply models fixed zonal capacity requirements that are defined by user input and assigns each resource type an assumed contribution towards those requirements. In this evaluation, NYISO derived the inputted project case zonal capacity requirements from its analysis of TSL based limits discussed in this section.

assess whether the UPNY-SENY and UPNY-CONED interfaces would limit the system's ability to relocate capacity from Zone K to zones A through F.

MMU Analysis of Avoided Capacity Costs

We performed an analysis to examine whether upstream constraints might materially impact the amount of capacity that can be shifted from downstate to upstate by the T051 project. We used a simplified hourly resource adequacy model that considers load, resource availability and transfer limits between NYISO zones, using inputs consistent with NYISO's Policy Case resource adequacy analysis.²⁶ Our model determines zonal capacity requirements designed to satisfy NYISO's resource adequacy criteria using a method comparable to the LCR Optimizer.

Our analysis found that the T051 project would reduce downstate capacity requirements by much less than NYISO's evaluation assumed. NYISO assumed that approximately 2 GW of capacity could be held in zones A through F instead of zone K as a result of the T051 project. By contrast, we found that the UPNY-CONED constraint is likely to bind during the study period, so that little or no capacity can be shifted from downstate to upstate as a result of T051. However, we also found that the project would allow some capacity to be shifted from New York City to Long Island, where it is comparably less costly, providing potential cost savings.

Recent market outcomes support the finding that little or no capacity can be shifted upstate without upgrading UPNY-CONED. The UPNY-CONED interface was binding in the 2020/21, 2021/22 and 2023/24 LCR studies following the retirement of the Indian Point nuclear plant in Zone H.²⁷ This suggests that an attempt to shift significantly more capacity upstream would aggravate this constraint. Table 1 illustrates the significance of UPNY-CONED using assumptions derived from NYISO's 2030 Policy Case.

Table 1 shows that when flows via UPNY-CONED into downstate New York are at maximum levels, the transfer limits from zone I to zones J and K are near binding in the base case, but have

²⁶ NYISO based its analysis in the Policy Case on the 2030 Policy Case conducted for the 2022 Reliability Needs Assessment (RNA), with adjustments to align with the PPTN evaluation. Our resource adequacy tool considers a zonal hourly load forecast based on the Outlook S2 Case, with load forecast uncertainty adjustment based on the 2023/24 IRM Study. It models the renewable resources included in the PPTN Policy Case with hourly capacity factor profiles derived from the Outlook assumptions. We model zonal emergency transfer limits based on the 2026-32 RNA Topology Case (Fig. 25 of the 2022 RNA Appendix), which includes the impacts of the AC Transmission Projects. We also include the Clean Path New York project as a transfer interface between zones A-F and Zone J. We modeled a simplified zones and interzonal limits for the A-F, G, H-I, J and K regions based on the 2022 RNA Policy case plus Clean Path NY.

²⁷ See our Annual Report on the NYISO Markets for 2020 and 2022. The retirement of Indian Point resulted in an increased need for imports from upstate into zones H through K. Beginning in the 2021 capability year, Con Edison made operational changes to certain transmission facilities which increased the UPNY-CONED limit modeled in the IRM study. The UPNY-CONED transfer limit in the IRM study was 7,000 MW in 2021/22 and 2022/23, and 6,675 MW in 2023/24 after Con Edison's operational changes were reverted. The UPNY-CONED transfer limit in the 2030 RNA Policy Case is 7,050 MW.

significant spare capability in the project case. Unfortunately, this spare capability does not allow capacity to be relocated upstate. Hence, our analysis indicates that all or most of the capacity investment benefits estimated by NYISO cannot be realized without also upgrading UPNY-CONED and potentially other interfaces, such as UPNY-SENY. Additional upstream upgrades would substantially increase the cost of realizing any capacity investment savings.

Table 1: Comparison of Downstate Transfers Limits and 2030 Load Forecast

MW		Pre-Project	T051
UPNY-CONED Emergency Limit	(a)	7,050	7,050
Peak Load in zones H and I	(b)	1,830	1,830
Supply in zones H and I	(c)	456	456
Supply Available for Transfer to J and K	(d) = (a) - (b) + (c)	5,676	5,676
Zone I → Zones J and K Emergency Limit	(e)	5,693	7,093
Unused Transfer Capability to J and K	(f) = (e) - (d)	17	1,417

2. Impact of Peaking Plant Cost Assumptions

New York’s Climate Leadership and Community Protection Act (CLCPA) requires the state’s electric system to be zero emissions by 2040. Various studies have shown that a reliable zero emissions system will require a large amount of generation capacity that is dispatchable for long periods and can operate when intermittent renewable output is low. Hence, NYISO began including generic DEFRs in its long term planning studies in 2022.

NYISO’s evaluation considers cost savings from building future additions of peaking capacity upstate instead of on Long Island. All of these savings are in the form of avoided investments in DEFRs, a hypothetical peaking technology assumed to be compliant with state environmental laws.²⁸ Hence, the savings determined by NYISO are driven by the difference in the assumed cost of building a DEFR in Long Island compared to other regions of the state. NYISO assumed that DEFRs will be extraordinarily expensive to build, resulting in apparent cost savings that are highly speculative.

Impact of DEFR Assumptions on NYISO’s Evaluation

NYISO’s evaluation used a base case in which 5.2 GW of DEFR capacity is built in Long Island and 27.2 GW statewide by 2040. All of the avoided capacity investment cost determined by NYISO comes from shifting DEFR capacity from Long Island to zones A through F. NYISO assumed that the capital cost of DEFRs will be \$4,500 per kilowatt in Rest of State and \$5,850 per kilowatt in Long Island (\$2021).²⁹ By contrast, the NYISO’s last Demand Curve Reset study found the capital cost of a dual-fuel H-Frame combustion turbine to be \$1,042 per kW in Rest of

²⁸ See Figures 12 and 13 of Appendix N of NYISO’s report.

²⁹ See Appendix D of NYISO’s 2021 System & Resource Outlook study at p. 7, available [here](#).

State and \$1,158 per kW in Long Island. As a result, each MW of capacity investment that can be shifted from Long Island to Rest of State avoids over 11 times more capital cost under NYISO’s assumptions than it would using current technologies.

As a result, NYISO calculates large investment cost savings because the assumed costs of the generation projects that are shifted upstate are extremely high. In particular, NYISO’s pre-project case includes the addition of 1.7 GW of new DEFR capacity in Long Island built between 2030 and 2035, at a cost of \$9.8 billion (\$2022). NYISO’s project case for T051 allows these DEFRs to instead be built in the Rest of State region in 2037 at a cost of \$7.7 billion (\$2022). This \$2.1 billion difference largely accounts for the capacity saving benefit estimated by NYISO.

Speculative Nature of DEFR Assumptions

The assumed future DEFR costs used in NYISO’s evaluation are highly speculative. NYISO originally contemplated three potential DEFR technologies:³⁰

- *Low capital / high operating cost* technology with a capital cost of \$1,000 per kW roughly equivalent to a combustion turbine burning renewable natural gas,
- *Low operating / high capital cost* technology with a capital cost of \$8,000 per kW roughly equivalent to nuclear, and
- *Medium capital / operating cost* technology whose cost (\$4,500 per kW) is a simple average of the first two options.

In the PPTN evaluation, only the “medium capital / operating cost” option was considered in the capacity expansion model, although this option does not correspond to any known generating technology. Hence, while the DEFR capital cost is a key parameter driving NYISO’s evaluation, its costs and other characteristics are highly speculative.

New York State has not yet issued guidance on what dispatchable technologies will comply with the CLCPA, and there has been little deployment of potentially viable technologies to date. However, peaking technologies are generally chosen to minimize capital costs and it is reasonable to expect that low-capital, high-operating cost technologies will be pursued as demand for non-emitting peaking capacity grows. For example, MIT researchers Hernandez and Gençer (2021) estimate the capital cost of a gas turbine capable of burning hydrogen to be \$1,320 per kW—similar to the “Low capital / high operating cost” technology.³¹

³⁰ See December 17, 2021 NYISO Electric System Planning Working Group presentation “System & Resource Outlook Update” at slide 14, available [here](#). NYISO refers to a study commissioned by New York State that employed a proxy zero emissions technology with costs above those of modern peaking plants, but the ‘medium capital / operating’ DEFR assumption has capital costs 80 percent higher than this technology.

³¹ See Hernandez and Gençer (2021), “Techno-economic analysis of balancing California’s power system on a seasonal basis: Hydrogen vs. lithium-ion batteries”, *Applied Energy* Volume 300, available [here](#).

While green hydrogen is not currently traded as an energy commodity, it may become available in the future at a high price to support something similar to the “Low capital / high operating cost” technology. Additionally, if green hydrogen becomes a traded commodity, then the production of green hydrogen from surplus renewable generation would result in market incentives that could reduce curtailment in a study like the Long Island Offshore Wind Export PPTN evaluation. Hence, there is a wide range of potential technologies that could be viable in the future, and the costs and characteristics of those technologies will have dramatic effects on the mix of transmission, generation, and storage that will be cost-effective in the future.

NYISO’s base case assumes that 27 GW of DEFRs are built by 2040 at a cost of \$150 billion (\$2022), exceeding the combined cost of all of the renewables and storage New York must build to meet its zero emissions mandate.³² It is unclear whether these assumptions are realistic or if they can provide a reasonable basis for major investment decisions at this time.

Conclusions on Avoided Peaking Plant Costs

NYISO’s evaluation vastly overstates the amount of capacity that could be shifted from Long Island to upstate as a result of the PPTN projects by not considering upstream transmission constraints that are not addressed by the PPTN projects. Further, NYISO uses speculative assumptions for the savings resulting from each megawatt shifted.

Consequently, the true capacity savings benefit is likely to be much smaller than NYISO’s estimates. Since the avoided cost of peaking capacity is the largest benefit estimated by NYISO for most proposals, these issues have a major impact on benefit-cost ratios. Overestimating avoided capacity savings will bias the selection process in favor of less efficient projects that provide larger increases in the Long Island import transfer limit.

In our evaluation, we make the following adjustments to estimate avoided cost of peaking capacity. As a result, we estimate avoided peaking capacity benefits that are much smaller than NYISO’s estimates:

- We estimate the change in optimized capacity requirements in each zone in the project case vs. the base case based on the resource adequacy model analysis described above.
- We use a \$1,320 per kW (\$2020) base capital cost for a hypothetical DEFR technology and \$14 per kW-year fixed operating cost, based on estimates by Hernandez and Gençer (2021) for a hydrogen-fueled combustion turbine with selective catalytic reduction. We apply the same zonal cost ratios as in NYISO’s evaluation (1.00 for Rest of State, 1.14 for Hudson Valley, 1.39 for New York City and 1.30 for Long Island).

³² See “Outlook Policy Case Additions” for the S2 Case of NYISO’s 2021 System & Resource Outlook, available [here](#) in the Outlook Data Catalogue, and assumed generation investments costs in Appendix D of the 2021 Outlook, available [here](#)

- Based on the above assumptions, we quantify annual avoided costs of peaker capacity as the difference in optimized capacity requirement in each zone in the project case vs. the base case, multiplied by the levelized carrying cost of peaking capacity in the same zone.

C. Avoided Cost of Investment to Satisfy State Policy Mandates

NYISO's evaluation quantified the ability of the proposed PPTN projects to avoid or defer investments in renewable generating capacity needed to satisfy the state's electricity sector mandates. Specifically, the CLCPA requires 70 percent renewable energy by 2030 and 100 percent zero emissions by 2040. NYISO developed its Policy Case assuming that these mandates are met, using a capacity expansion model to determine the amount of investment in wind and solar capacity that would be needed by 2040. NYISO then assumed that the increase in deliverable offshore wind energy resulting from the proposed PPTN projects would reduce the amount of land-based wind and solar the state would need to procure in order to meet its clean energy targets. After re-running the capacity expansion model to include the impact of the proposed PPTN projects, NYISO found that approximately 1.3 GW of investment in solar PV capacity could be avoided by 2040.³³

This is a reasonable approach to estimate the environmental policy benefits of the proposed PPTN projects (e.g., their ability to reduce the cost of achieving environmental goals). However, NYISO's calculation can be improved in the following ways:

- *Impact of Avoided Investments on Production Costs:* NYISO's evaluation did not consider that renewable generation investments that are avoided by the proposed PPTN projects would no longer be available to provide production cost benefits. This results in double-counting of project benefits by assuming that the avoided solar projects continue to provide zero-cost energy even if they are never built.
- *Annualization of Avoided Costs:* NYISO calculated avoided cost savings by discounting the capital cost of each investment deferred or avoided in each year, rather than the annualized carrying charge of the investment. This misaligns the timing of when the savings are counted from the actual delivered benefit, which is the reduction of carrying costs over the lifetime of the avoided investment. Additionally, NYISO did not consider avoided O&M costs of renewable investments.
- *Avoided Local Transmission Investment:* NYISO used a zonal capacity expansion model to determine the amount of upstate renewable investment that could be avoided. However, NYISO's 2021 System & Resource Outlook study found that local transmission constraints will result in significant curtailment of renewables at many locations in upstate zones if they are not addressed. Hence, NYISO's analysis likely understates the avoided cost of renewable investments upstate, which may need to be accompanied by local transmission upgrades not considered in the capacity expansion model.

³³ See Figures 8 and 9 of Appendix N of NYISO's report.

- *Cost of Incremental Offshore Wind Energy:* NYISO’s Policy Case included 6 GW of offshore wind on Long Island and 12 GW statewide by 2040. This is significantly more than is required either by the PPTN (3 GW on Long Island) or by state policies (9 GW by 2035). It is also more than NYISO forecasted would be developed by 2040 as part of an efficient buildout of renewables to meet the 2040 zero emissions mandate in its System & Resource Outlook S2 Case, which only slightly exceeded the 9 GW mandate. NYISO’s evaluation did not account for the incremental net cost of deploying additional offshore wind to Long Island, which would offset avoided policy costs.

In our B-C Ratio, we estimated avoided policy costs using a methodology that is comparable to the one used by NYISO but accounts for the factors discussed above. We multiplied the net reduction of renewable curtailment provided by the proposed PPTN project in each year by Implied Net REC cost of procuring an equivalent amount of solar generation in that year. Our estimate of the avoided Implied Net REC cost of solar includes O&M costs and an estimate of the cost of local transmission upgrades per annual megawatt-hour of generation, based on the “Phase II” local transmission projects recently approved by the NYPSC.³⁴ In 2040 and beyond, we subtract out the Implied Net REC cost of additional offshore wind procurement needed to realize the project benefits from the avoided policy costs. This continues to yield positive savings because the INREC cost of offshore wind is projected to be below solar by that time.

D. Production Cost Modeling Assumptions

The NYISO estimated production cost benefits using the GE MAPS production cost model database developed as part of the 2021 System & Resource Outlook study (the “Outlook”). The NYISO relied on the “S2” case developed in the Outlook to model a resource mix that complies with New York state policy, specifically the requirement for an electric sector that is 70 percent renewable by 2030 and 100 percent zero-emissions by 2040, including 9 GW of offshore wind by 2035. In the “Policy” case for the PPTN evaluation, NYISO modified the Outlook S2 database to include 12 GW of offshore wind by 2040, with 6 GW located in Long Island.³⁵

While it is reasonable for the NYISO to rely primarily on the Outlook models, there are several modeling assumptions that could be modified to improve the accuracy of the estimated production cost savings.

1. Underestimation of Production Costs in GE MAPS

³⁴ See February 16, 2023 *Order Approving Phase 2 Areas of Concern Transmission Upgrades* in NYPSC Docket 20-E-0197. We estimate local transmission costs per megawatt-hour based on the levelized value of the estimated \$4.4 billion cost of the approved Phase 2 upgrades divided by the 30,332 GWh of energy deliverability headroom they are expected to provide.

³⁵ See Appendix L of NYISO’s report.

The current GE-MAPS model does not include transmission outages and unforeseen factors such as load forecast error that exacerbate congestion during actual market operations and, as such, does not fully capture the value of new transmission lines that may help mitigate the impact of such factors. Transmission outages drive a large share of congestion in market operations, especially in areas with renewable generation. In the AC Transmission Proceeding, the Brattle Group presented analysis showing that accounting for transmission outages and real world variability of system conditions would have increased estimated production cost savings by 40 percent.³⁶ We accounted for this issue in our B-C Ratio by incorporating the 40 percent adder. Considering these factors would significantly increase the estimated benefits of new transmission, we recommend that future production cost simulations explicitly consider them.^{37,38}

2. Impact of Long Island Reserve Requirements

NYISO's GE-MAPS analysis inaccurately estimates production cost savings and offshore wind curtailment benefits because it does not consider operating reserve requirements on Long Island. NYISO typically requires up to 1.3 GW of reserves on Long Island to maintain security and reliability following the two largest contingencies. Most of this is currently satisfied by older peaking capacity currently on Long Island with a portion of the reserves held on steam turbine units with long startup notification times. Given the sizes of offshore wind facilities in the interconnection queue, the reserve requirement for Long Island could rise up to 2.6 GW during periods of high wind production. Furthermore, the NYISO is evaluating the use of a reserve requirement to cover intermittent generation uncertainty based on the difference between the (POE50) wind generation forecast and the POE95 or POE99 forecast.³⁹ Holding reserves to cover this uncertainty will require the NYISO to commit thermal units on many days with high wind forecasts. This will lead to additional curtailment of offshore wind on Long Island because online thermal generation will reduce the amount of offshore wind that can be injected without curtailment. However, the baseline MAPS case does not model these reserve requirements.

In the long term, the impact of Long Island reserve requirements on offshore wind curtailments and production costs is highly uncertain. On one hand, large amounts of offshore wind may cause reserve requirements on Long Island to increase significantly in some time periods to secure against the loss or over-forecast of large wind resources. On the other hand, existing

³⁶ See slides 13-18 of the Brattle Group's October 8th 2015 presentation on *Benefit-Cost Analysis of Proposed New York AC Transmission Upgrades*.

³⁷ See Recommendation P19-6 in Section V.

³⁸ While the NYISO evaluated the reliability benefits from the proposed projects under various maintenance conditions as part of the Operability metric, this metric does not include a monetary valuation of the economic, environmental, and reliability impacts under maintenance conditions.

³⁹ The POE95 forecast refers to the MW level that has a 95 percent likelihood of being exceeded.

aging steam turbines may eventually be replaced by resources that can provide reserves without being committed to produce energy, such as battery storage or new dispatchable emissions-free technologies with fast startup times.

NYISO attempted to account for the impact of reserve requirements in the ‘P95 Case’ production cost model runs.⁴⁰ In this case, NYISO estimated the amount of transmission capability that would not be available for bulk imports and exports because it would be needed to account for ramping, regulation, and other unforeseen variations in net load (i.e., load minus wind and solar output) on Long Island. This was based on the 95th percentile (i.e., value which is exceeded 5 percent of the time) of changes in hourly net load on Long Island in each run year. This measure was intended to serve as a proxy for net load forecast *uncertainty*, which differs from net load *change* (because some of the hour-to-hour change in net load is predictable). NYISO deducted this value from the thermal limits of transmission lines between Long Island and neighboring areas, reducing the amount of capacity that can be imported or exported.

NYISO’s approach to quantifying the impact of Long Island reserve needs is quite simplistic and does not account for the dynamic factors described above. NYISO applied the same reduction of transmission capability in all hours of the year, instead of applying hourly values driven by factors that would affect reserve needs at different times (such as offshore wind output levels). This analysis assumes that reserves are held in the form of reduced utilization of the transmission interface, instead of being provided by local generators. As noted above, some generators can provide reserves while offline and avoid the need to restrict transmission capability. By not considering these factors, the CRM case provides only a very rough estimate of how ramping, regulation, and reserve needs will affect production cost benefits.

In our B-C Ratio we use NYISO’s CRM Case, since it is likely that a case with no adjustment for this issue will grossly understate benefits, especially as reserve requirements increase in the future. However, detailed modeling is needed to reliably estimate this benefit and the projected cost savings should be assumed to have an extremely high degree of uncertainty, especially in the outer years of the analysis when the dispatchable fleet is replaced by storage and unspecified new resource types.

3. Importance of Future Zero Emissions Fuel Cost Assumptions

NYISO’s evaluation assumed that there will be no remaining fossil generation in New York by 2040, consistent with the CLCPA’s zero emissions mandate. Hence, long term production cost savings are driven by the variable costs of dispatchable emissions free resources (DEFRs) that are assumed to replace the fossil fleet, as well as the cost of imports from other areas. NYISO assumed that the variable cost of DEFRs will be approximately \$150 per MWh (\$2022). As a

⁴⁰ See the subsection titled “Long Island Net-Load Variability Sensitivity” in Appendix L of NYISO’s report.

result, forecasted LBMPs increase rapidly during the study period. This is the main driver of the large increase in production cost savings attributed to the projects after 2035.

It is impossible to know what the fuel and variable operating costs of future zero-emissions dispatchable technologies will be. While it is generally expected that zero emissions fuels will be more costly than natural gas today, their precise costs will depend on many presently unknown factors. Hence, we recommend that NYISO examine multiple scenarios of DEFR cost assumptions in future PPTP evaluations. Ultimately, the DEFR cost assumptions result in an outsized importance of highly uncertain outer year production cost savings to the project's NPV. This suggests that it would be optimal to defer selection of a project until closer to the time when these large benefits are projected and more reliable information becomes available.

V. CONCLUSIONS AND RECOMMENDATIONS

The NYPSC issued an order stating the CLCPA constitutes a Public Policy Requirement, including the mandate to generate 70 percent of electricity from renewable sources by 2030 and the mandate to install 9 GW of offshore wind by 2035. The order identified a PPTN to support these mandates by increasing deliverability of offshore wind on Long Island to other areas of the State. In accordance with its tariff, NYISO evaluated 19 proposed projects that were proposed to address the PPTN. The NYISO published the Public Policy Transmission Planning report that summarizes the need, the proposed projects, V&S assessment, and the evaluation projects. NYISO has recommended the Board of Directors select Project T051.

We reviewed NYISO's report and evaluated the costs and benefits of the proposed projects in the context of assessing their effects on the NYISO markets. Based on this evaluation, we find that the proposed transmission projects are not estimated to be helpful for satisfying the 2030 mandate and they would make relatively modest contributions toward satisfying the 2035 mandate. Furthermore, the majority of the benefits of new transmission over the study period depend on the future costs and characteristics of DEFRs, which will likely be clarified in the coming years. In addition, investment in storage could be used to satisfy the 2030 and 2035 mandates more cost-effectively if it is not crowded-out by the new transmission. Given the estimated investment lead time of around six years and small benefits before 2040, it is premature to move forward with a capital-intensive transmission project at this time. These results support the following conclusions and recommendations:

- It is not advisable to move forward with one of the proposed transmission projects at this time given the magnitude and timing of the potential benefits. This process could be re-initiated in future years if warranted.
- If the NYISO determines that it must or should select a project, we recommend that it reconsider its recommendation of T051 since it does not appear to be the most cost-effective project.
- We recommend that the NYISO provide initial estimates of costs and benefits of generic potential transmission solutions to the PSC to inform future PPTN determinations.

In general, we found the NYISO's methodologies for this assessment are reasonable. However, we identify several methodological enhancements for NYISO to consider in future public policy transmission evaluations. Recommended enhancements are summarized below. Each recommendation is identified with a number indicating the year it was first published and the number it had in that document.

Recommendations for Future Modeling Enhancements

- P23-1: Evaluate capacity benefits of transmission using realistic local capacity requirements to estimate: (a) the avoided cost of generation investment that would otherwise be needed for reliability, plus (b) the economic value of improved resource adequacy.
- P23-2: Model DEFRs (dispatchable emission-free resources) with a range of costs and characteristics to understand how they will affect the future value of new transmission.
- P22-1: Model procurement of ancillary services in production cost models, considering how future needs will be driven by resource mix changes. Consider adoption of different production cost modeling software if needed to accomplish this.
- P22-2: Perform an ‘optimized’ production cost model sensitivity case in which renewable capacity in locations with high marginal rates of curtailment is relocated to locations with lower marginal rates of curtailment.
- P22-3: Improve modeling of energy storage to more accurately estimate the benefits of storage in the capacity expansion and production cost models.⁴¹
- P22-4: Include options for 2-, 6- and 8-hour storage in the Capacity Expansion Model.
- P19-6: Consider transmission outages and other unforeseen factors in estimating production cost savings.

Recommendations for Transmission Planners (including NYISO, utilities, and State agencies)

- P23-3: Provide additional information on costs and benefits of generic potential transmission solutions in comments to the PSC before its determination of the PPTN.
- P22-5: Estimate the Implied Net REC Cost of proposed regulated transmission projects and compare it to market-based alternatives including merchant battery storage and renewables. This will indicate if the transmission project is a cost-effective means to increase the supply of RECs to load compared to other investments.
- P22-6: Exercise caution when evaluating benefits of transmission projects whose value is strongly linked to uncertain long-term generator-siting decisions.
- P19-2: Estimate O&M costs of new and decommissioned facilities.

Recommendations for Policymakers

- P22-7: Price incremental clean energy from new and existing renewables in a uniform manner so that environmental goals can be satisfied in a more cost-effective manner.

⁴¹ Specifically, we recommend modifying (a) storage costs in the capacity expansion model to offset under-valuation of its benefits due to lower locational and temporal granularity, and (b) the siting and dispatch pattern of storage in MAPS to more realistically minimize renewable curtailment based on market incentives.

Appendix D: Frequently Asked Questions

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



Introduction

In response to the order issued by New York State Public Service Commission (“PSC”) on March 19, 2021, the NYISO anticipates soliciting Public Policy Transmission Projects and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN) for evaluation in the NYISO’s Public Policy Transmission Planning Process.

The NYISO held a Technical Conference with Developers and other interested parties on July 8, 2021. This frequently-asked-questions (FAQ) document summarizes questions that were received after or that were not fully addressed during the Technical Conference. The document is divided into two sections: (1) detailed questions on the assumptions and results of the Viability & Sufficiency Analysis (VSA) Baseline Analysis, and (2) general questions.

This document was revised on September 20, 2021 to correct a tariff citation in Q53.

Key References

NYISO point of contact for the Public Policy Transmission Planning Process:

PublicPolicyPlanningMailbox@nyiso.com

Baseline Results:

https://www.nyiso.com/documents/20142/22792555/LI_PPTN_BaselineResults.xlsx/f5828b2c-7855-49a2-bcd5-997f5a4f452c

Technical Conference Presentation:

<https://www.nyiso.com/documents/20142/22968753/LI-PPTN-TechConference.pdf/c9ab8cbb-9104-b145-3b43-d5b0de929114>

Planning Manuals: <https://www.nyiso.com/manuals-tech-bulletins-user-guides>

- Public Policy Transmission Planning Process Manual and attachments
- Transmission Expansion & Interconnection Manual
- Economic Planning Process Manual

Planning Reports:

- AC Transmission Public Policy Planning Report_
<https://www.nyiso.com/documents/20142/5990681/AC-Transmission-Public-Policy-Transmission-Plan-2019-04-08.pdf/23cbba74-a65e-66c2-708e-eaa0afc9f789>
<https://www.nyiso.com/documents/20142/5990681/AC-Transmission-Appendices-2019-04-08.pdf/1d0d4e35-5061-6aaa-9776-365388380dc4>
- Western NY Public Policy Planning Report_
<https://www.nyiso.com/documents/20142/2892590/Western-New-York-Public-Policy-Transmission-Planning-Report.pdf/d3f62964-2e2d-588c-2da4-9aa33bb5470b>
- 2019 CARIS Report
<https://www.nyiso.com/documents/20142/2226108/2019-CARIS-Phase1-Report-Final.pdf/bcf0ab1a-eac2-0cc3-a2d6-6f374309e961>

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<https://www.nyiso.com/documents/20142/2226108/2019-CARIS-Phase1-Appendix-Final.pdf/7d061d58-85c5-6319-2407-3e2bdddcee71>

Relevant Tariff Sections: <https://www.nyiso.com/regulatory-viewer>

- Section 22 Transmission Interconnection Procedures
- Section 31.4 Public Policy Transmission Planning Process

VSA Baseline Analysis

Case Assumptions

Q1. What ratings are used in VSA Baseline cases?

NYISO Response:

Winter ratings are used in the spring light load cases and summer ratings are used in the summer peak load cases.

Q2. What are the assumptions for peaker units or aged units in Zone K (Long Island) and Zone J (New York City)? Can conventional units that are offline be switched on or redispatched?

NYISO Response:

The assumptions regarding the deactivation of generators subject to the DEC rules on air emissions from simple-cycle combustion turbines (6 NYCRR Part 227-3) are consistent with those reflected in the NYISO's latest FERC Form 715 Filings. In addition, the VSA Baseline cases also incorporate generator removal assumptions based upon age that are similar to the 2020 RNA 70 percent renewable energy by 2030 (70 x 30) scenario assumptions. Conventional units can be switched on or redispatched as long as their bus codes are not type 4 or Pmax = 0MW, indicating that a unit is unavailable.

Q3. Are there any must-run units in Zones J & K and can their output be reduced in the VSA?

NYISO Response:

Certain units in Zones J & K were modeled in-service to meet local reliability needs. Those units have "planttype" option marked as "UpOnly" in the subsystem file. These units should not be reduced from the dispatch level in the cases, but their output can be increased.

Q4. How is energy storage treated in the VSA? Can these units be dispatched in the economic 8,760 hourly simulations?

NYISO Response:

Energy storage units should not be dispatched in the VSA steady state analysis, but they may be dispatched in the evaluation and selection analyses, including production cost simulations.

Q5. Can status of the Zones I & J series reactors be changed in the Baseline cases?

NYISO Response:

Generally, the status of series reactors should not be changed in the Baseline cases. In the evaluation and selection phase, NYISO may consider changes proposed by the developer to the status of the series reactors.

Note, at the July 23, 2021 ESPWG/TPAS meeting, Con Edison presented an update to their Local Transmission Plan to place the line 41 & 42 (Gowanus-Farragut) series reactors in-service starting in 2025. The summer peak Baseline case models these reactors as bypassed, but their status will not materially affect the Baseline results. After consultation with the local TOs, the NYISO may make necessary topology updates in the Evaluation & Selection phase, but does not intend to update the VSA cases.

Q6. How are the offshore wind projects modeled in the case?

NYISO Response:

With the exception of Q#612/695 South Fork Wind, all of the proposed offshore wind generators are currently modeled simply as injections at their point of interconnection because their final configurations have not yet been determined. The NYISO may make modeling changes or add scenarios in the evaluation and sufficiency assessments if there are offshore wind project updates available.

Q7. Are any of the transmission projects in the Utility Investment Working Group report, a component of the PSC PowerGrid study, modeled in the cases?

NYISO Response:

Firm Transmission Owner Local Transmission Projects are modeled in the cases, including the three Con Edison TRACE projects in New York City and LIPA's 33kV Barrett double bus tie reconfiguration, Wildwood to Riverhead 69 kV to 138 kV conversion, and the new 138 kV Riverhead to Canal circuit.

Q8. Which year's load forecast is modeled in the Baseline and Alternate scenarios?

NYISO Response:

For summer peak load cases, the New York Control Area (NYCA) loads are consistent with the 2021 Gold Book¹ projection of the net 2031 Summer Coincident Peak load including the impact of the behind-the-meter (BTM) distributed generation assumptions. For the spring light load cases, NYCA loads are 45% of 2031 Summer Coincident Peak load including the BTM distributed generation assumptions.

Q9. In the Alternate Scenario, where does the East Garden City offshore wind interconnect?

NYISO Response:

In the Alternate Scenario, the offshore wind is connecting on the 345kV side of East Garden City, bus number 128825.

Q10. What is the schedule of controllable LIPA imports in VSA Baseline assumptions?

¹ <https://www.nyiso.com/documents/20142/2226333/2021-Gold-Book-Final-Public.pdf/b08606d7-db88-c04b-b260-ab35c300ed64?t=1619631804748>

NYISO Response:

In the VSA Baseline cases, line 901 (Valley Stream – Jamaica 138 kV) is scheduled at 100 MW from Long Island to New York City, and line 903 (Lake Success – Jamaica 138 kV) is scheduled at 200 MW from Long Island to New York City, for a total of 300 MW. The Neptune line is scheduled at 660 MW import in the summer peak case and 0 MW import in the spring light load case. The Cross Sound Cable and Northport-Norwalk PARs are scheduled at 0 MW import for the summer and spring light load cases. The Y49 line (Sprain Brook – East Garden City 345 kV) is scheduled such that the Zone K to I flow is evenly split between the Y49 and Y50 (Dunwoodie – Shore Rd 345 kV) lines.

Depending on a PPTN project's capability, a Developer may propose to change these schedules, and schedules of internal PARs, as long as the following are met:

- Maintain at least a total of 300 MW flow scheduled into Jamaica.*
- For any PAR within Long Island, on a Long Island tie line, or proposed as part of a PPTN project, the scheduled pre-contingency flow on the PAR should be no more than 75% of its rating, per the Transmission Expansion and Interconnection Manual.*
- Scheduled flows on external tie lines are maintained.*

Q11. A few 138kV circuits in Long Island system have winter ratings lower than summer ratings, are these correct?

NYISO Response:

The NYISO confirmed that these circuit ratings were correct at the time of the Baseline Assessment.

Simulation Software and Options

Q12. Which software did NYISO use for running the contingency analysis?

NYISO Response:

NYISO conducted the Baseline Assessment with TARA 1902.2.

Q13. Will NYISO provide TARA option files?

NYISO Response:

NYISO will provide N-1 and N-1-1 option files in CSV format in the latest base case package. The options files used in the baseline case and alternate scenario were created to help minimize the high number of overloads found with up to 12 GW of offshore wind connected to the existing transmission system. Developers may use different options in development of their project as long as they are consistent with the Sufficiency Criteria.

Q14. Why are “enforcePmax” and “unitSelectionMode” not enforced in the NYISO’s TARA options file?

NYISO Response:

The “enforcePmax” option is only effective for units with an initial Pgen of larger than Pmax. In the Baseline case and Alternate Scenario, generators are dispatched below Pmax, so “enforcePmax” will not affect results. The “unitSelectionMode” applies user-defined unit/load selection options. Developers may

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enable or change these options based on their preferences. A few units in Long Island are dispatched in-service, but below P_{min} , in case of outage of an offshore wind plant in a load pocket, such as Barrett.

Monitor & Subsystem Files

Q15. Are offshore wind and other renewables included in the inertial response of the system, i.e. “default inertia” subsystem?

NYISO Response:

The default inertia subsystem is for the entire Eastern Interconnect system, including offshore wind and other renewables. Any post-contingency output change to the downstate renewables in the VSA would be minimal.

Q16. What is the study area for Baseline Assessment?

NYISO Response:

The VSA will consider the entire NYCA. To manage the large number of constraints, the Baseline Assessment focused on contingencies and monitoring in Zones H - K.

Q17. Can radial facilities be excluded from monitoring?

NYISO Response:

Radial facilities can be excluded for voltage monitoring for the post-contingency conditions.

Q18. Can flow on Dysinger PAR reverse?

NYISO Response:

In VSA, yes, as long as it will not result in any violations. The scheduled pre-contingency flow on a PAR should be no more than 75% of its rating, per the Transmission Expansion and Interconnection Manual.

Contingencies and Allowable System Adjustments

Q19. Are any offshore wind generation units allowed to curtail output under N-1-1 conditions for the Baseline or Alternate Scenarios?

NYISO Response:

Per the sufficiency criteria, offshore generation cannot be curtailed for the Baseline cases. There are no requirements for the Alternate Scenario; those results are provided for information. However, the Alternate Scenario, among other possible scenarios with higher offshore wind buildout, will be used to assess the benefits of proposed transmission projects in the evaluation and selection phase, including under N-1-1 conditions.

Q20. Are renewables other than Long Island offshore wind allowed to be redispatched in the VSA?

NYISO Response:

Renewables in Zones H - J should not be redispatched. This includes offshore wind, utility scale solar, and the Rainey HVDC. For purpose of the VSA, upstate renewables are allowed to be redispatched, if necessary.

Q21. Should contingencies for the loss of an entire offshore wind plant be respected?

NYISO Response:

Yes, per Q6, the configuration of these offshore wind farms are unknown and a single element contingency could result in loss of the entire plant.

Q22. Are Bus Section contingencies and P5 contingencies included in VSA Baseline analysis?

NYISO Response:

Bus Section and P5 contingencies are included in N1 and L2 contingency decks and will be simulated according to the appropriate criteria.

Q23. Will “SB:SPRA345_RN2” and “Y49 M29” contingencies be included in contingency deck?

NYISO Response:

Yes. These two contingencies have same impact as the loss of the Y49 cable for the Baseline cases, but could have different impacts depending on the potential PPTN project-related transmission topology changes.

Q24. Can developers ignore the automatic single branch outages command in the N1 & L2 contingency files?

NYISO Response:

Yes, as long as developers account for any new contingencies that could be created by the PPTN project or other case assumptions.

Contingency Analysis Criteria

Q25. Which set of ratings is utilized for cables in Con Edison under N-1 and N-1-1 conditions?

NYISO Response:

The NYISO utilizes LTE ratings unless the NYSRC Reliability Rule Exception for underground cables may be applied. For the VSA, the study auxiliary files have accounted for the appropriate ratings for securing the system.

Q26. What facilities need to be secured for Single + Multiple contingency combinations in N-1-1 analysis?

NYISO Response:

BPS elements should be secured for Single + Multiple contingencies.

Q27. Should the LIPA 138 kV BES or BPTF (and not BPS) facilities meet NERC TPL-001-4 performance requirements, or meet performance requirements specified in NPCC Directory 1?

NYISO Response:

LIPA 138kV and above facilities should meet all applicable NERC, NPCC, and NYSRC performance requirements. However, there are no LIPA 138 kV facilities classified as BPS and subject to NPCC and NYSRC performance criteria. Any new 345 kV facilities will be assumed to comply with NPCC and NYSRC BPS criteria in the VSA.

General

Sufficiency Criteria

Q28. Can non-wires or hybrid (e.g., transmission plus generation/storage) solutions be proposed and would they be eligible for recovery under the NYISO tariff?

NYISO Response:

All solutions can be proposed and considered in VSA. Note, for this particular PPTN, an intertie cable is required under the sufficiency criteria. Moreover, in order to be eligible for cost recovery under NYISO OATT, the solution must be transmission only.

Q29. Is the requirement for a new intertie to increase transfer capability between Zones K & I, between Zone K & J, or both?

NYISO Response:

The requirement is for a new transmission intertie cable between Zone K and the rest of the NYCA.

Q30. Would potential solutions that do not include a new Zone K intertie, but otherwise satisfy all of the PPTN requirements, be considered?

NYISO Response:

Transmission solutions that do not include a new intertie cable between Zone K and the rest of NYCA will not be deemed sufficient and will not move on to the second phase of the evaluation. The PPTN solution must resolve both relevant Zone K and interface constraints, as well as relevant constraints outside of Zone K (see next section).

Q31. Will the ISO consider potential solutions that utilize offshore transmission facilities?

NYISO Response:

The NYISO will consider all solutions, including those that utilize offshore transmission facilities.

Q32. What N-1-1 criteria will apply in VSA?

NYISO Response:

NERC, NPCC, NYSRC, and TO N-1-1 criteria will apply. Con Edison's N-1-1-0 criteria will not be performed during VSA, but will be applied in the interconnection studies.

Potential Constraints Excluded From Sufficiency Criteria

Q33. Are all constraints below 138 kV in Zone K excluded from the Developer's responsibility to resolve within their proposals?

NYISO Response:

Yes, constraints below 138 kV that are not BES do not need to be addressed under sufficiency criteria.

The interconnection process will identify upgrades for any lower voltage reliability violations caused by a PPTN project.

Q34. Do all observed overloads need to be relieved?

NYISO Response:

Constraints that are driven primarily by other VSA baseline assumptions (e.g., New York City-connected offshore wind plants and the Rainey HVDC), rather than Long Island offshore wind, do not need to be resolved by the project under the sufficiency criteria.

Q35. Can the NYISO clarify which constraints related to the interconnection of Long Island offshore wind farms do not need to be addressed under sufficiency criteria?

NYISO Response:

In addition to constraints discussed in Q33 and Q34, the Barrett – New Bridge Rd and Barrett – Valley Stream 138 kV² constraints do not need to be resolved. However, a PPTN project should not make these constraints worse.

Q36. NYISO has indicated that certain constraints/overloads are excluded from the sufficiency criteria. How will these constraints be treated in selection criteria?

NYISO Response:

In most cases, the excluded constraints will not be considered in the selection criteria unless they are a distinguishing factor between projects. For example, a project that results in no 69 kV overloads may be viewed more favorably compared to a project that results in many 69 kV overloads for the same level of offshore wind export.

Q37. Will the upgrades to facilities (specifically the 138kV lines near Barrett) resulting from previously awarded offshore projects be included in the evaluation and selection phase?

NYISO Response:

It is too preliminary to model these upgrades based on the presentation³ for the Empire Wind 2 developer at the August 2, 2021 TPAS/ESPWG meeting. If new information on these upgrades becomes available, NYISO may consider it after the VSA.

Additional Resources

Q38. Can NYISO share the equipment ratings indicating what is limiting for circuits identified as overloaded in the Baseline case results?

² The Technical Conference presentation mentioned Barrett to East Garden City 138 kV lines. This FAQ clarifies that it is the Barrett to New Bridge Rd. and Barrett to Valley Stream 138 kV constraints that are excluded from sufficiency criteria.

³ <https://www.nyiso.com/documents/20142/23466290/EW2%20PPTN%20Proposal%20r2.pdf/e62df6b4-0ec1-e542-9427-7cf8d973468f>

NYISO Response:

Rating sheets for the relevant LIPA and NYPA circuits will be provided to Developers with CEII approval.

Q39. Can NYISO provide system diagrams for Zones J & K systems?

NYISO Response:

One line system diagrams will be provided to Developers with CEII approval.

Q40. Does NYISO provide stability, short circuit, and economic planning databases used in the analyses?

NYISO Response:

Only power flow cases were created for the VSA. Developers may request the standard NYISO stability and short circuit databases in a CEII/NDA request form, but these will not be included in the VSA assumptions. The NYISO's economic analysis databases are not provided because they contain Confidential Information that the NYISO cannot disclose under its Code of Conduct. See OATT Attachment F.

Evaluation Assumptions

Q41. How will the evaluation treat transmission projects in NYSERDA's Tier 4 solicitation?

NYISO Response:

A generic 1,310 MW HVDC injection at Rainey is modeled for the VSA. NYISO may update the analysis databases with up-to-date information in the evaluation and selection phase, including any projects that are awarded Tier 4 Renewable Energy Credits (RECs) and known associated upgrades.

Q42. How did NYISO determine the points of interconnection (POI) for the non-awarded offshore wind farms modeled in the Alternate Scenario (6 GW of offshore wind in Zone J and 6 GW of offshore wind in Zone K)?

NYISO Response:

NYISO consulted with stakeholders and policymakers, and reviewed development trends in choosing the offshore wind assumptions. These specific offshore wind points of interconnection (POIs) and sizes are reasonable assumptions of a possible offshore wind buildout and do not indicate any specific knowledge of development plans. Other scenarios, including different offshore wind POIs and sizes, may also be used in the evaluation and selection phase.

Q43. What are the interconnection statuses of the offshore wind projects with NYSERDA or LIPA awards and are their study reports available?

NYISO Response:

On the NYISO interconnections site, <https://www.nyiso.com/interconnections>, you may view any completed study reports and the interconnection status on the NYISO Interconnection Queue.

Evaluation Metrics

Q44. Will feasibility and high-level constructability be considered when evaluating cable routes?

NYISO Response:

Yes, the NYISO will consider these factors in the evaluation and selection phase in selection criteria, such as risk to project completion.

Q45. Will NYISO focus on Long Island when considering impacts on system utilization (i.e., performance)?

NYISO Response:

NYISO will consider the project's impact across the entire NYCA system.

Q46. Could NYISO provide clarity on the “Transfer Capability” and “Cost per MW”, and will it consider Zone K import or export limits?

NYISO Response:

Given the range of load and generation conditions, these metrics will assess the project's ability to export offshore wind across the relevant interfaces. “Cost per MW” will be calculated using the cost of the entire project. A project's ability to import power into Long Island during low wind periods will also be assessed in these or other metrics.

Q47. Will NYISO apply a social cost of carbon pricing in the Evaluation/Selection phase?

NYISO Response:

The NYISO may consider the social cost of carbon or other carbon price indices, but it has not been determined if and how social cost of carbon will be considered in the LI PPTN. You may review the how social cost of carbon was evaluated in the AC Transmission PPTN in section A5.1 (Social Cost of Carbon Sensitivity) of the AC Transmission Public Policy Transmission Planning Report Addendum.

Developers may also wish to consult the New York State Department of Environmental Conservation Guidelines for “Establishing a Value of Carbon” See

https://www.dec.ny.gov/docs/administration_pdf/vocguidrev.pdf

Q48. Could NYISO provide clarity on the operability metric?

NYISO Response:

See the NYISO's presentation at the Technical Conference on the operability metric on slide 50. Developers may wish to review the WNY and AC Transmission reports as an example of past evaluation of the operability metric.

Q49. Should land acquisition costs be included in the cost estimate of each solution? How will property costs be considered for solutions that include demonstrated site control?

NYISO Response:

Yes, land acquisition costs should be included in the cost estimate of each solution for the evaluation phase cost metric. While the property acquisition costs are excluded from cost containment, they will be evaluated in the overall cost of the project. NYISO's independent consultant will also determine a cost for a solution's land acquisition. Solutions with site control will have their real property value cost evaluated by NYISO's independent consultant for use in the project evaluation.

Public Policy Process

Q50. What communication points will the Developer have with the NYISO prior to and after solution submission?

NYISO Response:

Prior to submission, communication will be primarily through ESPWG/TPAS stakeholder meetings. Any written questions NYISO can answer will be addressed at a stakeholder meeting or additional FAQ documents. Questions may be submitted at any time to PublicPolicyPlanningMailbox@nyiso.com. After project submission, NYISO may request project clarification or additional information from the developer at any point in the process. See OATT §31.4.4.3.5. NYISO may also invite each Developer to give an introductory presentation to NYISO during VSA. Direct communication between NYISO, the Developer, and TOs will likely be more frequent in the interconnection process than in the public policy project evaluation.

Q51. How will solution proposals be submitted?

NYISO Response:

Developers should complete all required information 31.4.5.1 of Attachment Y by completing and submitting to the NYISO the forms set forth in Attachments B and C to the PPTPP manual.⁴ Note that Attachment C was recently updated and posted on August 6, 2021. The application materials should be emailed to PublicPolicyPlanningMailbox@nyiso.com and NYISO will provide instruction if any attachments are too large to be sent via email. An interconnection application is also required for each project through the interconnection project community (additional information can be found at <https://www.nyiso.com/interconnections>).

Q52. Is there a required or expected in-service date of a PPTN solution?

NYISO Response:

There is no required in-service date. NYISO will review the developer's proposed project schedule and take it, and any associated in-service risks, into consideration during the evaluation and selection phase. The NYISO will consider the extent which a project can timely enter into service to meet the requirements of the Climate Leadership and Community Protection Act.

⁴ <https://www.nyiso.com/manuals-tech-bulletins-user-guides>

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Q53. How will NYISO consider PPTN facilities jointly developed with a non-PPTN developer not seeking cost-recovery through the Public Policy Transmission Planning Process?

NYISO Response:

NYISO will consider whether other projects are sufficiently firm to be included in its modeling for project evaluation. OATT 31.4.5.1.4 and 31.4.5.1.6 details the submission requirements for contracts and financing for PPTN solution facilities.

Upgrades

Q54. Is an Upgrade still treated as an upgrade if the project is proposed by the incumbent TO?

NYISO Response:

The definition of “upgrade” under Section 31.6.4 of Attachment Y does not change based on the entity that proposes the facility. However, in anticipation of the NYISO filing pending tariff revisions that were discussed with stakeholders at various working groups from June 2021 to August 2021, if a Transmission Owner proposes modifications to its own facilities as a component of their Public Policy Transmission Project and those modifications meet the definition of a Public Policy Transmission Upgrade (to be defined in Section 31.1 of Attachment Y), the NYISO will designate those Public Policy Transmission Upgrades in accordance with the proposed designation process. Public Policy Transmission Upgrades will be designated to the Transmission Owner that owns the facility.

Q55. Are developers required to provide a cost for facilities it classifies as upgrades?

NYISO Response:

Yes, a Developer is required to submit cost estimates for all project components including new facilities and upgrades. Any voluntary cost cap should also include all project components. However, in anticipation of the NYISO filing pending tariff revisions that were discussed with stakeholders at various working groups from June 2021 to August 2021, the NYISO advises Developers to provide separate cost estimate figures for project components are new facilities and upgrades. In addition, a Developer that wishes to propose cost containment should continue to include capital costs consistent with the tariff that is effective at the time of submission. A Developer may also submit a proposed cost cap that only include facilities that the Developer considers to be new transmission facilities. Once the aforementioned tariff provisions are effective, NYISO will afford Developers an opportunity to clarify any submitted cost containment mechanisms to align it with what constitutes Included Capital Costs and Excluded Capital Costs.

Production Cost Simulation

Note, the economic planning database that will be used in the Evaluation & Selection phase is currently under development. Therefore, the majority of the answers provided in this section refer to the most recent database from the 2019 CARIS study⁵. These answers represent past NYISO practice, but may not reflect the future study practice, including for evaluation of projects in response to the LI PPTN. A data

⁵ <https://www.nyiso.com/documents/20142/2226108/2019-CARIS-Phase1-Report-Final.pdf>

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catalog has been added to the end of this document containing links to the 2019 CARIS input data and results. The Economic Planning Manual is currently being revised with stakeholder review and contains additional information on the assumptions and methodology typically used in NYISO production cost simulations.

Q56. What network model will the production cost simulations use?

NYISO Response:

The LI PPTN database will utilize the models from the 2021-2040 System & Resource Outlook, which is currently under development, and may take into consideration the latest system updates. The NYISO will build out a 30-year baseline database and a 20-year database for each PPTN project starting with the project in-service date. A comparison of the results of project and baseline cases will be performed to determine the project benefits.

Q57. What are the monitored facilities, facility ratings, and contingencies used in the production cost simulations?

NYISO Response:

See Section 3 Methodology and Metrics, and Section 4 Model Assumptions of the 2019 CARIS report, as well as more details in Appendix C and Appendix D.

Q58. How will NYISO model the existing PARs on the LIPA interface for the purpose of production cost modeling?

NYISO Response:

In the 2019 CARIS, existing PARs on the LIPA interface had their hourly schedules optimized based on minimizing production cost.

Q59. How is the generic 1,310 MW HVDC injection at Rainey 345 kV modeled in the production cost simulations?

NYISO Response:

In the 2019 CARIS, the generic HVDC injection at Rainey 345 kV was modeled as a fixed pattern injection with no northern terminal, and it was given an historic HQ-NYISO schedule scaled to provide a maximum output of 1,310 MW. The LI PPTN, evaluation and selection phase may use updated modeling assumptions based on any updates in the 2021-2040 System & Resource Outlook as well as any NYISERDA Tier 4 REC award(s).

Q60. How will NYISO model the 138 kV Barrett constraints that are excluded from sufficiency criteria in production cost modeling?

NYISO Response:

In the LI PPTN, securing these lines will depend on if there are any relevant system updates, including upgrades associated with the Empire Wind II projects. Absent any such updates, NYISO does not intend

to secure these lines.

Q61. What generation dispatch profile will NYISO use for offshore wind projects?

NYISO Response:

In the 2019 CARIS, hourly offshore wind profiles were based off the NREL database and adjusted for offshore wind farm size and location.

Property Rights

Q62. Please describe the process or processes for obtaining rights to use existing utility right-of-ways?

NYISO Response:

Developers should indicate how they intend to obtain property rights for their project, including, but not limited to use of new or existing rights of ways. Review OATT sections 31.4.5.1.1, 31.4.5.1.4, and 31.4.8.1.7 for more detail.

Q63. There is an exception within the Article VII regulations that exclude underground transmission lines in a city with a population in excess of 125,000. Is there a requirement to file an Article VII or can you utilize the exception if applicable?

NYISO Response:

Questions regarding Article VII siting requirements should be directed to the New York State Public Service Commission.

Introduction

On August 12, 2021, the NYISO solicited Public Policy Transmission Projects and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN) for evaluation in the NYISO's Public Policy Transmission Planning Process.

The NYISO held a Technical Conference with Developers and other interested parties on July 8, 2021, and issued a frequently-asked-questions (FAQ) document on August 11, 2021, that summarizes questions that were received after the Technical Conference. This document is a supplemental FAQ to address questions received since posting of the August 11 FAQ. Please refer to the following references which provide more detail on the topics related to these questions:

August 11, 2021, FAQ

<https://www.nyiso.com/documents/20142/22968753/LIPPTN-FAQ-08112021.pdf/9ea835b4-4343-be80-cdc2-c932a067e5cd>

LI PPTN Project Solicitation

<https://www.nyiso.com/documents/20142/22968753/Long-Island-Offshore-Wind-Export-Public-Policy-Transmission-Need-Project-Solicitation.pdf/51b8fdeb-1a66-2938-f116-38f1be486e0d>

Technical Conference Presentation:

<https://www.nyiso.com/documents/20142/22968753/LI-PPTN-TechConference.pdf/c9ab8cbb-9104-b145-3b43-d5b0de929114>

Case Assumptions

Q1. Will the renewable buildout assumptions in the Evaluation and Selection cases be the same as in the Viability & Sufficiency Analysis (VSA) cases?

NYISO Response:

For land-based renewable resources, the VSA cases used assumptions similar to the 2020 RNA “70 x 30” scenario, which were also similar to the assumptions used in the 2019 CARIS “70 x 30” scenario. In the Evaluation & Selection phase, the land-based renewable resource buildout assumptions will be updated mainly based on the assumptions being developed for various scenarios in the 2021-2040 System & Resource Outlook and updated if necessary. The offshore wind assumptions will be consistent with the VSA Baseline and Alternate Scenarios, but other offshore wind scenarios may be considered as well.

Q2. Can the schedule of the external tie lines with PJM and ISO-NE be adjusted in the base case or after a first level contingency? Similarly, can the schedules of the 901 and 903 Jamaica 138 kV tie lines with Con Edison be adjusted?

NYISO Response:

In the VSA, the schedules of the external ties lines will not be adjusted, even after first level contingency. The scheduled flows on the 901 and 903 lines can be adjusted in the base case or after the first level contingency, provided the schedule is not greater than 75% of the facility rating and at least 300 MW is scheduled into Jamaica (see Q10 of August 11, 2021, FAQ). However, NYISO will evaluate if any change on the 901 and 903 schedules in combination with the project results in additional reliability or operability concerns during the VSA and the evaluation and selection phases.

Contingency Analysis Criteria

Q3. Did NYISO use TARA’s Security Constrained Dispatch (SCD) in the Baseline Analysis?

NYISO Response:

Yes, the NYISO enabled certain SCD automated system adjustments when performing the analysis at N-0 and N-1 contingency levels. The options files have been provided to developers along with the baseline cases. Given the severity of constraints that SCD algorithms attempted to mitigate, the results could change with different SCD options. Developers may modify the SCD options to best optimize the results for their post-project cases. However, the SCD options must be consistent with the LI PPTN sufficiency criteria. See the August 11, 2021, FAQ for more details on allowable system adjustments.

Q4. Which contingencies should be included in the N-1-1 analysis?

NYISO Response:

VSA will consider NERC TPL and LIPA N-1-1 criteria for the Bulk Electric System (BES) facilities and NPCC and NYSRC N-1-1 criteria for the Bulk Power System (BPS) facilities. Please refer to the file

“TS2021_Yr_2031S_L1_PPTN_v0.con” for first level contingencies and “TS2021_Yr_2031S_L2_PPTN_v0.con” for second level contingencies.

Note, the provided contingency files contain contingencies, e.g., multiple element contingencies, for the second level which are applicable to BPS facilities, but not applicable for non-BPS facilities (including LIPA’s 138 kV system). For the purpose of meeting the sufficiency criteria, a developer may ignore any N-1-1 constraints that are beyond criteria. Developers may modify the auxiliary files the NYISO provided, specifically the N-1-1 exclude file, to change which facilities are monitored for different contingency types – provided that the analysis respects all applicable criteria.

Developers are reminded to account for contingency modifications related to system changes associated with their LI PPTN projects.

Q5. Should lines be secured to LTE ratings (Rate B) for N-1-1 analysis?

NYISO Response:

Yes, most elements should be secured to the LTE rating with notable exceptions contained in the exclude file. Con Edison’s N-1-1-0 criterion requires that certain facility loadings return to normal rating (Rate A), but this analysis will not be required as part of the VSA.

Q6. How will Con Edison’s N-1-1-0 criteria be used in the evaluation?

NYISO Response:

Con Edison’s N-1-1-0 planning criteria will not be considered under the sufficiency criteria in the VSA. N-1-1-0, along with all other applicable reliability criteria, will be evaluated in the interconnection process and considered in the evaluation and selection phase. To the extent possible, any Network Upgrade Facilities and cost estimates identified in the interconnection process will be incorporated in the evaluation and selection phase.

Q7. Is non-consequential load loss (i.e., load shedding that is not a direct consequence of a contingency event) allowed in the VSA?

NYISO Response:

No, load shedding will not be permissible to resolve any violations in VSA.

Q8. Can Barrett 138 kV contingencies be excluded given the anticipated Empire 2 Wind’s upgrades?

NYISO Response:

Certain identified overloads near Barrett 138 kV are expected to be resolved by the Empire Wind 2 upgrades. However, there is no indication that these future upgrades will affect the Barrett 138 kV contingency definitions. Therefore, these contingencies will be included in the VSA.

Q9. NYISO indicated that minimal output changes to renewables is possible based on inclusion in the “Default Inertia” subsystem. Does this mean that curtailment of Zone K solar is allowed in the VSA?

NYISO Response:

Curtailment of Zone J & K renewable resources, both solar and wind, is not allowed in the VSA. The “Default Inertia” subsystem allows power balancing following a loss of generation contingency to be spread across the entire Eastern Interconnection. The resulting minimal post-contingency generation changes are consistent with NYISO planning processes, but pre-contingency reduction of Zone J & K renewable resources is not allowed under the sufficiency criteria.

Q10. Is there any limit to the allowable amount of offshore wind curtailment allowed in the Alternate scenario?

NYISO Response:

No. Although curtailment is not allowed in the Baseline scenario with 3 GW of Zone K offshore wind, there is no such requirement for the Alternate scenario with 6 GW of Zone K offshore wind. The Alternate scenario, among other potential scenarios, will be used to evaluate and compare the PPTN projects’ ability for the system to export more than the minimum of 3 GW. All else being equal, a PPTN project that results in less curtailment in the Alternate scenario will perform better in the expandability and other metrics. Such project performance will be considered in the comprehensive evaluation of all categories of metrics to select the more efficient or cost-effective solution.

Sufficiency Criteria

Q11. Can a PPTN solution include an offshore transmission system which would connect to the offshore wind generator collector systems and divert some of the output from offshore wind farms from their respective points of interconnection (POIs)?

NYISO Response:

The NYISO would consider such a project provided that it meets all the sufficiency criteria, including at least one new intertie cable connecting Zone K and the rest of the NYCA. However, Developers should be aware that offshore wind generation feeders are typically considered Generator owner attachment facilities and are subject to FERC’s precedent on open access and priority rights interconnection customers’ interconnection facilities. Developers proposing to interconnect to a Generator owner’s attachment facility should consider also submitting any agreements, if applicable, for the use of the attachment facility pursuant to Section 31.4.5.1.4 of Attachment Y.

Q12. Are 138/69 kV and 138/34.5 kV transformers part of the sufficiency criteria?

NYISO Response:

None of the LIPA 138/69kV and 138/34.5kV transformers are classified as BES and therefore those transformers are excluded from the sufficiency criteria.

Q13. Do the Valley Stream to East Garden City 138 kV constraints need to be addressed in the VSA given the anticipated Empire Wind 2 upgrades?

NYISO Response:

Many of the overloads identified in the Baseline Assessment are driven entirely by the Empire Wind 2 farm pushing power from Valley Stream to East Garden City and are expected to be resolved by the Empire Wind 2 upgrades. These overloads that are specific to Empire Wind 2 can be excluded from the sufficiency criteria, similar to the treatment of the Barrett – Valley Stream and Barrett – New Bridge Rd 138 kV overloads identified in the Baseline Assessment.

However, the East Garden City – Valley Stream 138 kV lines are a part of the overall export path of offshore wind power from Long Island to the rest of the New York Control Area. There could be constraints on these lines that are not driven solely by Empire Wind 2. Developers are advised to not simply ignore all overloads on the East Garden City – Valley Stream 138 kV lines as there could be constraints identified in the VSA or in other scenarios in the evaluation and selection phase that are relevant to addressing the LI PPTN.

General Questions

Q14. Can NYISO provide the details to P5 (fault plus relay failure) contingencies?

NYISO Response:

LIPA, the facility owner, will provide a general description of the relay schemes to be shared with developers.

Q15. Can NYISO provide breaker-level diagrams of Zones I-K?

NYISO Response:

NYISO has provided NYISO's system one-line and breaker diagrams. For more detailed system information, you may request this directly from the respective TOs.

Q16. What level of detail is required from the PPTN Developer for the cost estimates of the upgrades to existing transmission facilities?

NYISO Response:

Developers are required to provide adequate detail for all facilities that are a part of their project, including upgrades to existing facilities, for NYISO to do a thorough evaluation of all metrics in the evaluation and selection. The data submission attachments outlined in Attachment C of the Public Policy Transmission Planning Manual, including cost estimate attachments C.4.1-C.4.4, are required for both new facilities and upgrades to existing facilities.

Note that the NYISO recently proposed tariff changes to provide a mechanism to implement the TO's right-of-first-refusal over upgrades to their existing transmission facilities. If those tariff changes are accepted by FERC, the NYISO would rely on its independent consultant's cost estimates for those facilities during the evaluation and selection phase.

Introduction

On August 12, 2021, the NYISO solicited Public Policy Transmission Projects and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN) for evaluation in the NYISO's Public Policy Transmission Planning Process.

The NYISO held a Technical Conference with Developers and other interested parties on July 8, 2021, and issued a frequently-asked-questions (FAQ) document on August 11, 2021 and a Supplemental FAQ on September 1, 2021, that summarizes questions that were received after the Technical Conference. This document is a second supplemental FAQ to address questions received since posting of the September 1 Supplemental FAQ. Please refer to the following references which provide more detail on the topics related to these questions:

September 1, 2021, Supplemental FAQ

<https://www.nyiso.com/documents/20142/22968753/LIPPTN-SupplementalFAQ-0912021.pdf/c7d00a5e-d93e-453a-bd87-6569beaaf526>

August 11, 2021, FAQ

<https://www.nyiso.com/documents/20142/22968753/LIPPTN-FAQ-08112021-rev09202021.pdf/9f174e6e-4d19-fd67-3670-b7d216339703>

LI PPTN Project Solicitation

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Q1. Can NYISO provide substation diagrams?

NYISO Response:

The Long Island Power Authority (LIPA) and Consolidated Edison Company of New York, Inc. (Con Edison) have agreed to provide in-person access at their sites by NYISO Qualified Developers for viewing certain breaker-level diagrams of selected substations for the purpose of developing a LI PPTN solution, pursuant to a non-disclosure agreement (NDA) provided by each company for access to critical energy infrastructure information (CEII).

All requests for access must be in writing and provided two business days in advance. All visitors to Con Edison must comply with Con Edison's COVID requirements including wearing a mask while inside of Con Edison's building. All visitors to Long Island offices shall comply with PSEG Long Island Job Hazard Analysis (JHA) COVID related protocols. A copy of JHA can be provided. Please note that COVID related requirements are subject to change.

See the September 10, 2021, email to Qualified Developers for LIPA and Con Edison contacts to obtain more information.

Q2. Can NYISO provide the details to P5 (fault plus relay failure) contingencies?

NYISO Response:

The relay details associated with relevant P5 contingencies have been provided to developers.

Q3. What redacted information is required in the PPTN application?

NYISO Response:

Please refer to OATT Section 31.4.4.3.3, which states: "If the Developer submits Confidential Information, as defined in Section 31.4.15, as part of its project information submitted pursuant to Section 31.4.4.3.2 or as part of its additional project information submitted pursuant to Section 31.4.4.3.5, the Developer shall submit redacted and un-redacted versions of this project information pursuant to Section 31.4.15.4."

Q4. Please confirm the OATT sections referenced in the answer to Q53 in the August 11 FAQ.

NYISO Response:

The answer to Q53 incorrectly cites OATT 31.4.5.6.1, which should instead be OATT 31.4.5.1.6. The August 11 FAQ has been corrected and reposted on the NYISO website.

Q5. Is the PPTN project responsible to fix Zone J violations?

NYISO Response:

See Q34 in the August 11, 2021, FAQ. Constraints that are driven primarily by other VSA baseline assumptions (e.g., New York City-connected offshore wind plants and the Rainey HVDC), rather than Long Island offshore wind, do not need to be resolved by the project under the Sufficiency Criteria.

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Q6. Are the LIPA bus section contingencies considered “multiple element” contingencies? Are these and other multiple element contingencies valid for the second level contingency for 138kV facilities?

NYISO Response:

Bus section contingencies are considered “multiple element” contingencies. Under the Sufficiency Criteria, “multiple element” contingencies are not valid as second level contingencies for facilities below 200 kV but are valid second level contingencies for facilities above 200 kV. See Q26 in the August 11, 2021, FAQ and Q4 in the September 1, 2021, Supplemental FAQ.

Q7. Can NYISO clarify what the facilities are in the “BMS Only” subsystem and if this is equivalent to the BES-only (non-BPS) system.

NYISO Response:

“BMS Only” facilities are secured by the NYISO for N-1 and N-1-1 conditions and are controlled by the TO. The “BMS Only” subsystem overlaps with BES-only (non-BPS) facilities, but they are not equivalent.

Q8. The NYISO indicated that it utilized TARA’s Security Constrained Dispatch (SCD) function to secure the system. Instead of using SCD, can developers demonstrate that facilities can be secured for each contingency individually?

NYISO Response:

SCD is a tool in TARA to automatically make system adjustments to mitigate violations. TARA’s SCD, other tools, or manual adjustment can be used to make system adjustments to secure the system. However, those system adjustments must be consistent with the Sufficiency Criteria and should be applied pre-contingency, or after first level contingency for N-1-1 analysis.

Q9. Please clarify if the “SOFT EXCLUDE MONTYPE 'LI_69” command in the exclude file applies to all contingencies?

NYISO Response:

Yes, the SOFT EXCLUDE command applies to all N-1 and N-1-1 contingencies. Securing the 69 kV system is beyond the Sufficiency Criteria and the above command would prevent facilities below 100 kV from being taken into consideration as part of SCD system adjustments, but these facilities will be monitored for information.

Developers may modify the provided auxiliary files, as appropriate, provided they are consistent with the Sufficiency Criteria. But this does not relieve the need to review all results to determine if specific constraints are included in the Sufficiency Criteria.

Q10. Can transformer taps and switched shunts be utilized post-contingency to bring voltages back within allowable limits? If so, can Developers indicate how the voltage violations were mitigated in the application?

NYISO Response:

NYISO standard planning practice is to allow automatic transformer tap and switched shunt adjustments pre-contingency, or after first level contingency in N-1-1, but not post-contingency. Certain post-contingency manual adjustments that model operator actions might be allowed under some system conditions. However, these operator actions will be reviewed during the interconnection studies.

If certain system adjustments are proposed for a project to meet the Sufficiency Criteria, a Developer may indicate such adjustments in their application or in response to NYISO follow up questions.

Appendix E: Proposed Solutions

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



Appendix E: Proposed Solutions

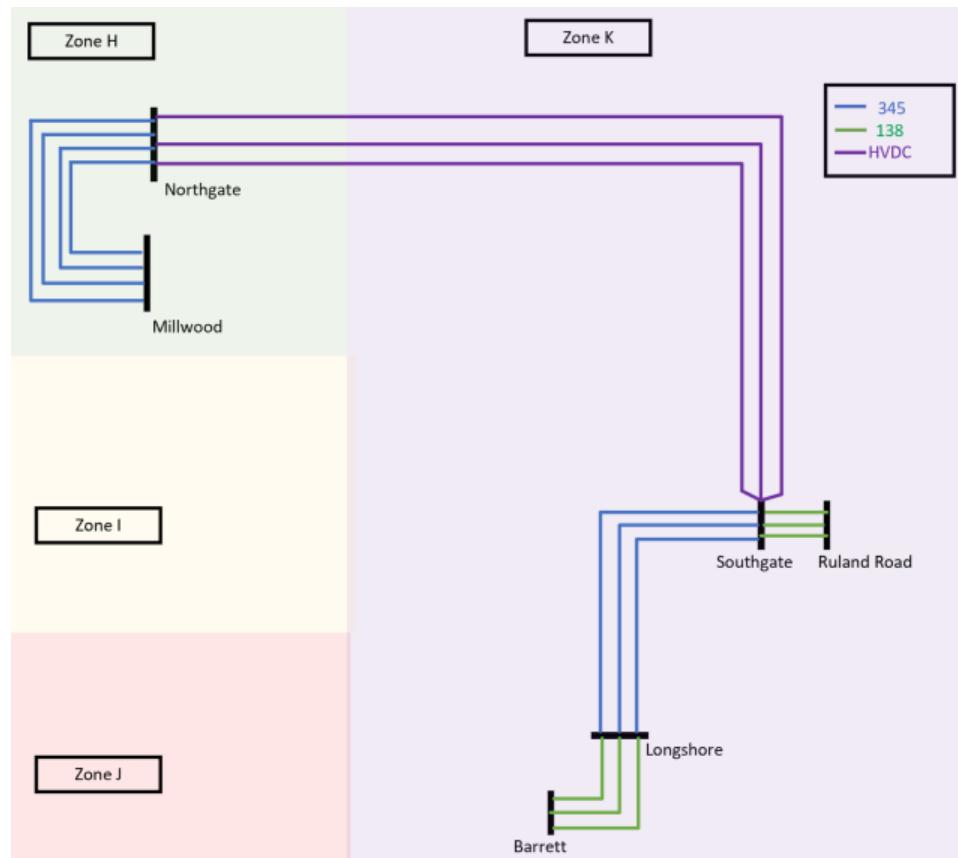
T035 LS Power Atlantic Gateway

LS Power Atlantic Gateway project proposal consists of the following components:

- Build a proposed Longshore 345/138 kV GIS substation interconnecting to the Barrett 138 kV substation with three phase angle regulators (PARs) on the proposed 345/138 kV transformers and two 150 MVAR shunt reactors
- Build a proposed Southgate 345/138 kV GIS substation interconnecting to Ruland Rd 138 kV substation with three ± 400 kV monopole DC converter stations each rated at 1200 MW and three 150 MVAR shunt reactors
- Build a proposed Northgate 345 kV GIS substation intercepting W80/W81/W97/W98 lines with three ± 400 kV monopole DC converter stations each rated at 1200 MW
- Build three proposed underground Longshore – Southgate 345 kV AC lines
- Build three proposed underground/submarine Southgate – Northgate ± 400 kV bi-directional DC transmission lines rated at 1200 MW each
- Reconductor East Garden City – Carle Place (138-361) and East Garden City – Roslyn (138-362)
- Replace terminal equipment on Holbrook – Ronkonkoma (138-875), Ronkonkoma – Central Islip (138-883), Holbrook – West Bus (138-888), and West Bus – Kings – Pilgrim (138-881)
- Reconductor a segment of and replace terminal equipment on Pilgrim PAR – Hauppauge (138-871)
- Replace terminal equipment Central Islip – Hauppauge (138-889)
- Glenwood South – Shore Road (138-365) upgrades (anticipated to be replacement of buswork and connections) to achieve a higher rating
- Reconductor of the 138 kV East Garden City – Carle Place line
- Reconductor the East Garden City – Roslyn 138 kV line
- Terminal upgrades at the Holbrook, Ronkonkoma, Central Islip, West Bus, Kings, Pilgrim, Glenwood South, and Shore Road (i.e., replacement of CTs or buswork) 138 kV substations
- Partial reconductor of the Pilgrim – Hauppauge 138 kV line with installation of a PAR

- Modify relay systems to eliminate P5 contingencies at the Barrett and Valley Stream substations

Figure 1: T035 LS Power Atlantic Gateway Major Project Components (Refer to the description above for complete list of project components)



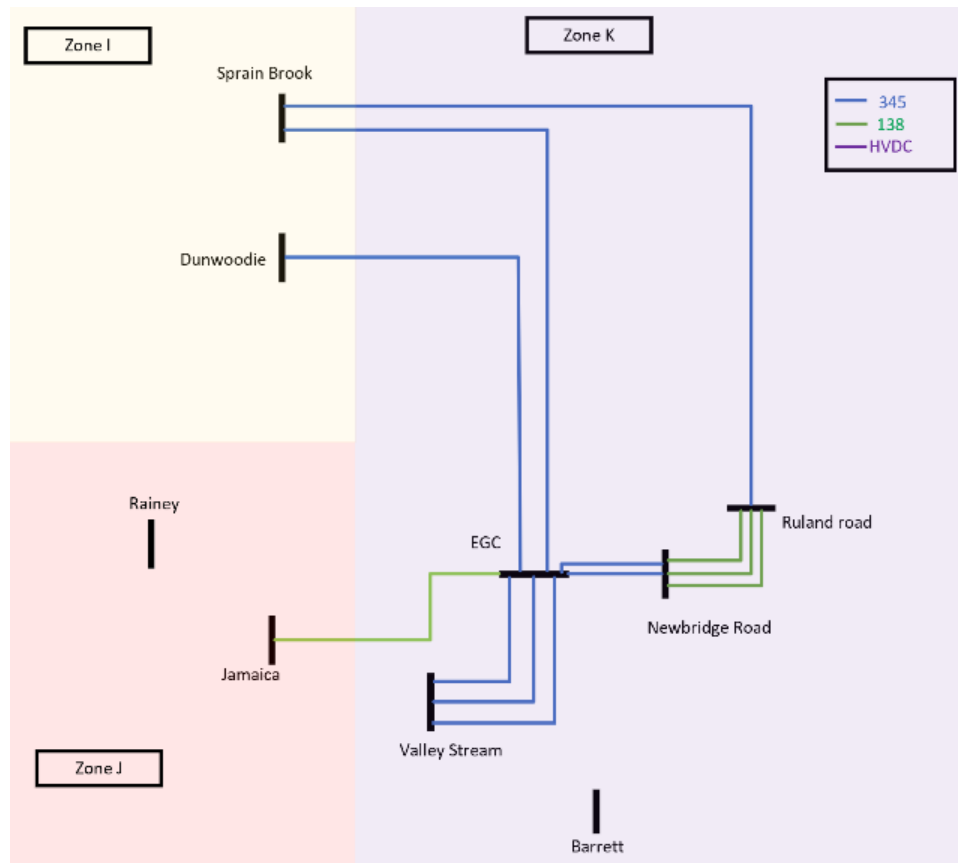
T036 NextEra Core 1

NextEra Core 1 proposal consists of the following components:

- Build a proposed East Garden City 345 kV GIS substation with two 1050 MVA PARs regulating flow on the existing East Garden City – Sprain Brook and the existing East Garden City – Dunwoodie 345 kV lines
- Build a proposed Ruland Road 345/138 kV GIS substation with two 345/138 kV transformers
- Build a proposed Valley Stream 345 kV GIS substation with three 345/138 kV transformers
- Build a proposed Barrett 138 kV GIS substation with one PAR regulating flow on proposed East Garden City – Jamaica 138 kV transmission line
- Build a proposed Rainey 345 kV GIS substation
- Build a proposed Dunwoodie 345 kV GIS substation
- Modify the existing Newbridge Road 345 kV substation to add two breaker-and-a-half GIS bays
- Build a proposed East Garden City – Dunwoodie 345 kV transmission line
- Build a proposed East Garden City – Sprain Brook 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build a proposed PAR-controlled East Garden City – Jamaica 138 kV transmission line
- Build three proposed East Garden City – proposed Valley Stream 345 kV transmission lines
- Partially reconductor the Newbridge Road – Ruland Road 138 kV line 561, 562, and 567
- Partially reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV line 462 and 463 as two 345 kV transmission lines from the proposed East Garden City substation to proposed Newbridge Road substation
- Partially rebuild the Syosset – Oakwood 138 kV transmission line
- Partially rebuild the Syosset – Greenlawn 138 kV transmission line
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (*i.e.*, loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections
- Build two Dunwoodie – proposed Dunwoodie 345 kV connections

- Build two Barrett – proposed Barrett 138 kV connections
- Build a proposed Newbridge Road 138 kV – Newbridge Road 345 kV connection
- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install shunt reactors for the proposed East Garden City – Dunwoodie 345 kV, proposed East Garden City – Sprain Brook 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Upgrade terminal equipment at the West Bus 138 kV and Kings 138 kV substations
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install a reactor at the Shore Road 138 kV substation to be five blocks of 50 MVAR
- Re-terminate Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate Mott Haven – Rainey East 345 kV transmission line to the proposed Rainey 345 kV substation
- Re-terminate Barrett – Freeport 138 kV line 459 to the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 to the Valley Stream 138 kV substation
- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation
- Add two breaker-and-a-half bays at the existing Sprain Brook 345 kV substation
- Retire the Valley Stream 138 kV lines 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV lines 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 2: T036 NextEra Core 1 Major Project Components (Refer to the description above for complete list of project components)



T037 NextEra Core 2

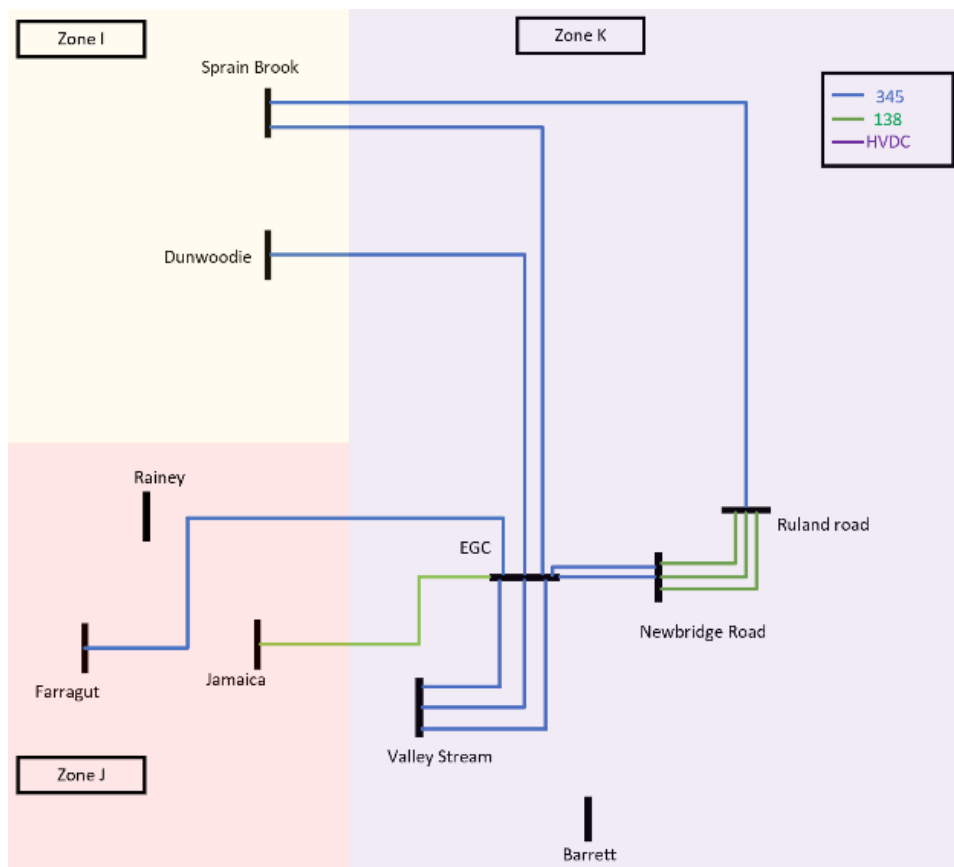
NextEra Core 2 proposal consists of the following components:

- Build a proposed East Garden City – proposed Farragut 345 kV transmission line
- Build a proposed East Garden City – Dunwoodie 345 kV transmission line
- Build a proposed East Garden City – Sprain Brook 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build a PAR-controlled East Garden City – Jamaica 138 kV transmission line
- Build three proposed East Garden City – proposed Valley Stream 345 kV transmission lines
- Partial reconductor the Newbridge Road – Ruland Road 138 kV lines 561, 562, and 567
- Partial reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV lines 462 and 463 as two 345 kV transmission lines from the proposed East Garden City substation to proposed Newbridge Road substation
- Partial rebuild of the Syosset – Oakwood 138 kV transmission line
- Partial rebuild of the Syosset – Greenlawn 138 kV transmission line
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (i.e., loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections
- Build two Dunwoodie – proposed Dunwoodie 345 kV connections
- Build two Barrett – proposed Barrett 138 kV connections
- Build two Farragut – proposed Farragut 345 kV connections
- Build a Newbridge Road 138 kV – Newbridge Road 345 kV connection
- Build an East Garden City 345 kV GIS substation with one 1050 MVA PAR regulating flow on the proposed East Garden City to proposed Farragut transmission line
- Build a Ruland Road 345/138 kV GIS substation with two 345/138 kV transformers and one 1050 MVA PAR regulating flow on the proposed Ruland Rd to Sprain Brook transmission line
- Build a Valley Stream 345 kV GIS substation with three 345/138 kV transformers

- Build a proposed Barrett 138 kV GIS substation with one PAR regulating flow on proposed East Garden City – Jamaica 138 kV transmission line
- Build a Rainey 345 kV GIS substation
- Build a Dunwoodie 345 kV GIS substation
- Build a Farragut 345 kV GIS substation
- Modify the existing Newbridge Road 345 kV substation to add two breaker-and-a-half GIS bays
- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install shunt reactors at the proposed East Garden City – Dunwoodie 345 kV, proposed East Garden City – Sprain Brook 345 kV, proposed East Garden City – proposed Farragut 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Terminal upgrades at the West Bus 138 kV and Kings 138 kV substations
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install reactor at the Shore Road 138 kV substation to be five blocks of 50 MVAR
- Re-terminate the Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate the Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate the Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Mott Haven – Rainey East 345 kV transmission line at the proposed Rainey 345 kV substation
- Re-terminate the Barrett – Freeport 138 kV line 459 at the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 at the Valley Stream 138 kV substation
- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation

- Install two breaker-and-a-half bays at the existing Sprain Brook 345 kV substation
- Retire Valley Stream 138 kV lines 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV lines 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 3: T037 NextEra Core 2 Major Project Components (Refer to the description above for complete list of project components)



T038 NextEra Core 3

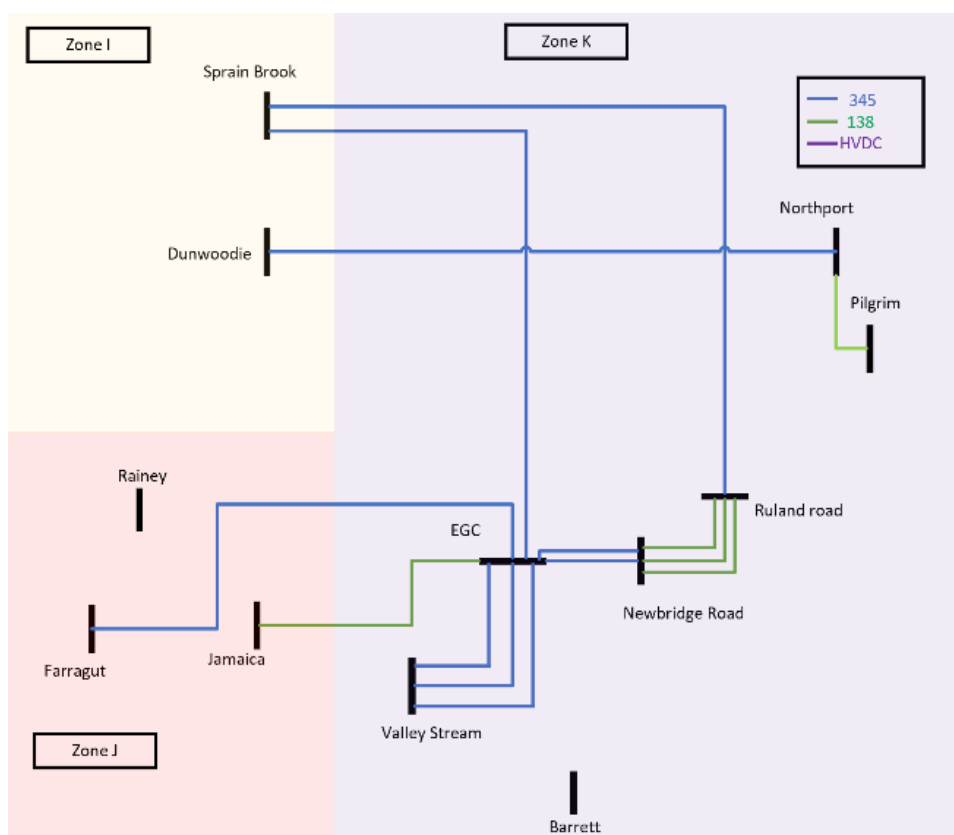
NextEra Core 3 proposal consists of the following components:

- Build a proposed East Garden City 345 kV substation with two 1050 MVA PARs regulating flow on the East Garden City – Sprain Brook and East Garden City – Farragut transmission lines
- Build a proposed Ruland Road 345/138 kV substation with two 345/138 kV transformers and one 1050 MVA PAR regulating flow on the Ruland Road – Sprain Brook transmission line
- Build a proposed Valley Stream 345 kV substation with three 345/138 kV transformers
- Build a proposed Northport 345/138 kV substation with two 345/138 kV transformers
- Build a proposed Barrett 138 kV substation with one PAR regulating flow on proposed East Garden City – Jamaica 138 kV transmission line
- Build a proposed Rainey 345 kV substation
- Build a proposed Dunwoodie 345 kV substation
- Build a proposed Farragut 345 kV substation
- Modify the existing Newbridge Road 345 kV to add two breaker-and-a-half GIS bays
- Build a proposed East Garden City – proposed Farragut 345 kV transmission line
- Build a proposed Northport – Dunwoodie 345 kV transmission line
- Build a proposed East Garden City – Sprain Brook 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build a proposed PAR controlled East Garden City – Jamaica 138 kV transmission line
- Build three East Garden City – proposed Valley Stream 345 kV transmission lines
- Partially reconductor the Newbridge Road – Ruland Road 138 kV lines 561, 562, and 567
- Partially reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV lines 462 and 463 as two 345 kV transmission lines from the proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (i.e., loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections

- Build two Dunwoodie – proposed Dunwoodie 345 kV connections
- Build two Barrett – proposed Barrett 138 kV connections
- Build two Farragut – proposed Farragut 345 kV connections
- Build two proposed Northport 138 kV – proposed Northport 345 kV connections
- Build two Northport – proposed Northport 138 kV connections
- Build a proposed Newbridge Road 138 kV – Newbridge Road 345 kV connection
- Build a proposed Pilgrim – proposed Northport 138 kV transmission line
- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install one breaker at the Pilgrim 138 kV substation
- Install shunt reactors for the proposed Northport – Dunwoodie 345 kV, proposed East Garden City – Sprain Brook 345 kV, proposed East Garden City – proposed Farragut 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Terminal upgrades at the West Bus 138 kV and Kings 138 kV substations
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install a reactor at the Shore Road 138 kV substation, consisting of five blocks of 50 MVAR
- Re-terminate the Northport – Pilgrim 138 kV lines 672, 677, and 679 at the proposed Northport 138 kV substation
- Re-terminate the Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate the Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate the Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Mott Haven – Rainey East 345 kV transmission line at the proposed Rainey 345 kV substation
- Re-terminate the Barrett – Freeport 138 kV line 459 at the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 at Valley Stream 138 kV substation

- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation
- Add two breaker-and-a-half bays at the existing Sprain Brook 345 kV substation
- Retire the Valley Stream 138 kV lines 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV lines 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 4: T038 NextEra Core 3 Major Project Components (Refer to the description above for complete list of project components)



T039 NextEra Core 4

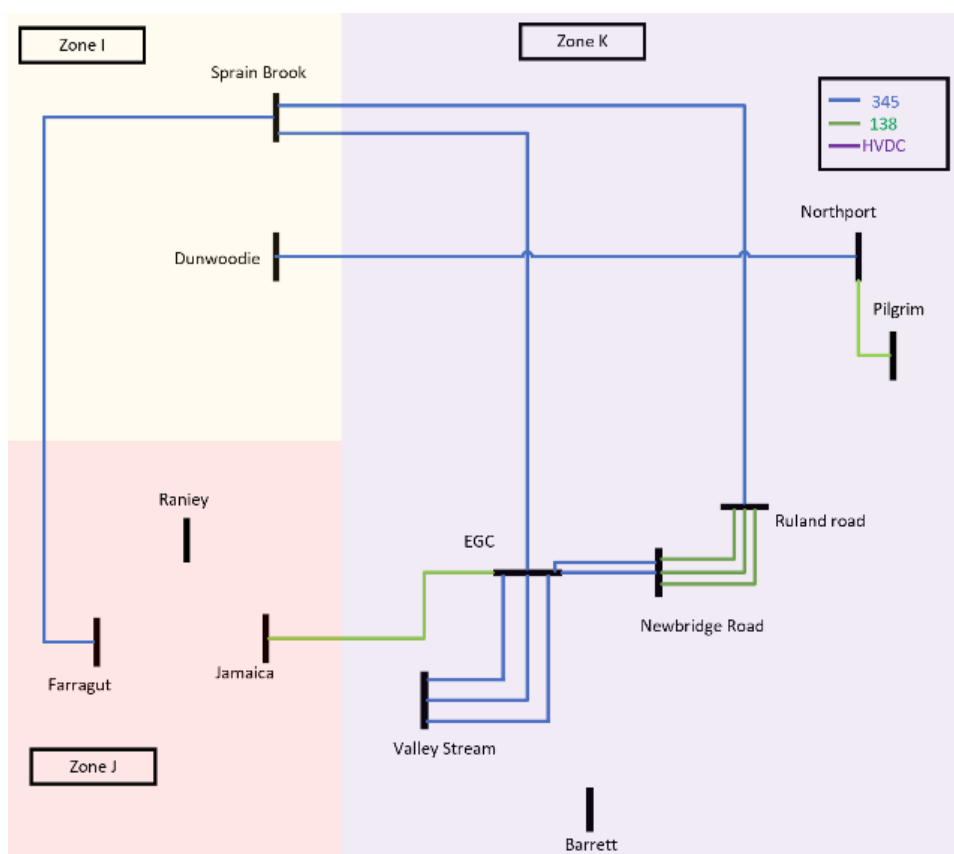
NextEra Core 4 proposal consists of the following components:

- Build a proposed Farragut – Sprain Brook 345 kV transmission line
- Build a proposed Northport – Dunwoodie 345 kV transmission line
- Build a proposed East Garden City – Sprain Brook 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build a PAR-controlled East Garden City – Jamaica 138 kV transmission line
- Build three proposed East Garden City – proposed Valley Stream 345 kV transmission lines
- Partial reconductor the Newbridge Road – Ruland Road 138 kV line 561, 562, and 567
- Partial reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV line 462 and 463 as two 345 kV transmission lines from the proposed East Garden City substation to proposed Newbridge Road substation
- Partial rebuild of the Syosset – Oakwood 138 kV transmission line
- Partial rebuild of the Syosset – Greenlawn 138 kV transmission line
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (i.e., loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections
- Build two Dunwoodie – proposed Dunwoodie 345 kV connections
- Build two Barrett – proposed Barrett 138 kV connections
- Build two Farragut – proposed Farragut 345 kV connections
- Build two proposed Northport 138 kV – proposed Northport 345 kV connections
- Build two Northport – proposed Northport 138 kV connections
- Build a Newbridge Road 138 kV – Newbridge Road 345 kV connection
- Build a Pilgrim – proposed Northport 138 kV transmission line
- Build an East Garden City 345 kV GIS substation with one 1050 MVA PAR at regulating flows on the proposed East Greenbush to Sprain Brook transmission line
- Build a Ruland Road 345/138 kV GIS substation with two 345/138 kV transformers

- Build a Valley Stream 345 kV GIS substation with three 345/138 kV transformers
- Build a Northport 345/138 kV GIS substation with two 345/138 kV transformers
- Build a proposed Barrett 138 kV GIS substation with one PAR regulating flow on the proposed East Garden City – Jamaica 138 kV transmission line
- Build a Rainey 345 kV GIS substation
- Build a Dunwoodie 345 kV GIS substation
- Build a Farragut 345 kV GIS substation
- Modify the existing Newbridge Road 345 kV substation to add two breaker-and-a-half GIS bays
- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install one breaker at the Pilgrim 138 kV substation
- Install shunt reactors at the proposed Northport – Dunwoodie 345 kV, proposed East Garden City – Sprain Brook 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed Farragut – Sprain Brook 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Terminal upgrades at the West Bus 138 kV and Kings 138 kV substations
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install reactor at the Shore Road 138 kV substation to be five blocks of 50 MVAR
- Re-terminate the Northport – Pilgrim 138 kV line 672, 677, and 679 to the proposed Northport 138 kV substation
- Re-terminate the Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate the Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate the Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Mott Haven – Rainey East 345 kV transmission line to the proposed Rainey 345 kV substation
- Re-terminate the Barrett – Freeport 138 kV line 459 to the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 at the Valley Stream 138 kV substation

- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation
- Add two breaker-and-a-half bays to the existing Sprain Brook 345 kV substation
- Retire the Valley Stream 138 kV lines 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV lines 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 5: T039 NextEra Core 4 Major Project Components (Refer to the description above for complete list of project components)



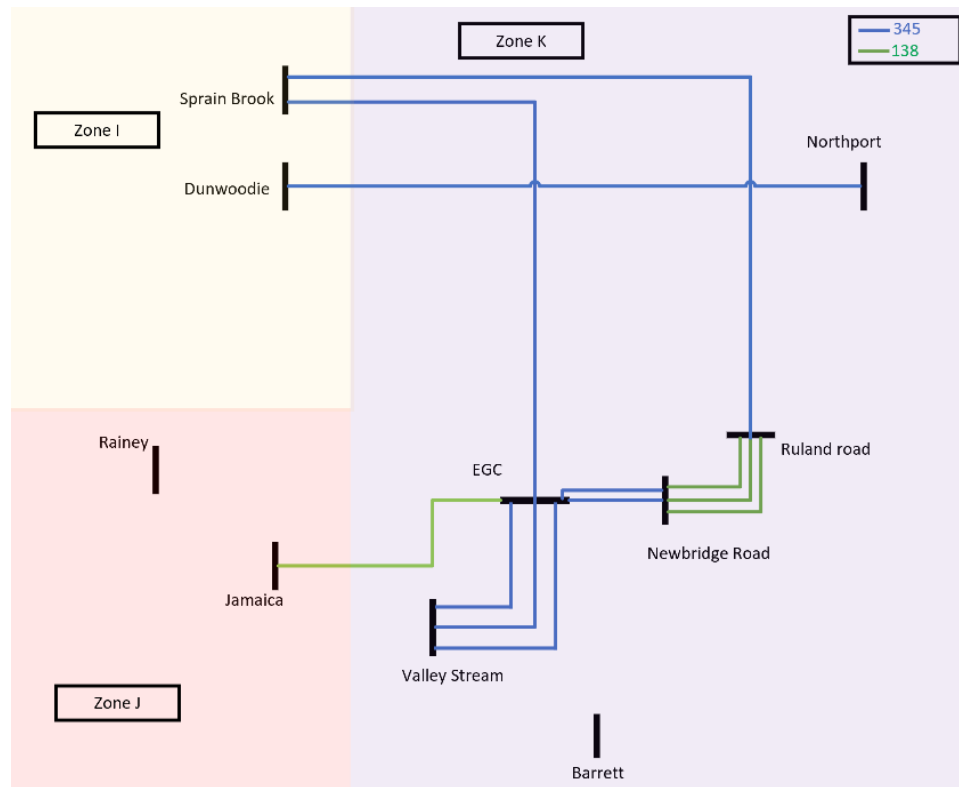
T040 NextEra Core 5

NextEra Core 5 proposal consists of the following components:

- Build a proposed East Garden City 345 kV substation with one 1050 MVA PAR regulating flow on the East Garden City – Sprain Brook transmission line
- Build a proposed Ruland Road 345/138 kV substation with two 345/138 kV transformers
- Build a proposed Valley Stream 345 kV substation with three 345/138 kV transformers
- Build a proposed Northport 345/138 kV substation with two 345/138 kV transformers
- Build a proposed Barrett 138 kV substation with one PAR regulating flow on proposed East Garden City – Jamaica 138 kV transmission line
- Build a proposed Rainey 345 kV substation
- Build a proposed Dunwoodie 345 kV substation
- Add two breaker-and-a-half GIS bays to the existing Newbridge Road 345 kV substation
- Build a proposed Northport – Dunwoodie 345 kV transmission line
- Build a proposed East Garden City – Sprain Brook 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build a proposed PAR-controlled East Garden City – Jamaica 138 kV transmission line
- Partially reconductor the Newbridge Road – Ruland Road 138 kV lines 561, 562, and 567
- Partially reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV lines 462 and 463 as proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (i.e., loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections
- Build two Dunwoodie – proposed Dunwoodie 345 kV connections
- Build two Barrett – proposed Barrett 138 kV connections
- Build two proposed Northport 138 kV – proposed Northport 345 kV connections
- Build two Northport – proposed Northport 138 kV connections
- Build a proposed Newbridge Road 138 kV – Newbridge Road 345 kV connection

- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install shunt reactors at the proposed Northport – Dunwoodie 345 kV, proposed East Garden City – Sprain Brook 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Terminal upgrades at the West Bus 138 kV and Kings 138 kV substations
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install a reactor at the Shore Road 138 kV substation to be five blocks of 50 MVAR
- Re-terminate the Northport – Pilgrim 138 kV line 672, 677, and 679 to the proposed Northport 138 kV substation
- Re-terminate the Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate the Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate the Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Mott Haven – Rainey East 345 kV transmission line at the proposed Rainey 345 kV substation
- Re-terminate the Barrett – Freeport 138 kV line 459 at the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 at the Valley Stream 138 kV substation
- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation
- Add two breaker-and-a-half bays to the existing Sprain Brook 345 kV substation
- Retire Valley Stream 138 kV lines 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV lines 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 6: T040 NextEra Core 5 Major Project Components (Refer to the description above for complete list of project components)



T041 NextEra Core 6

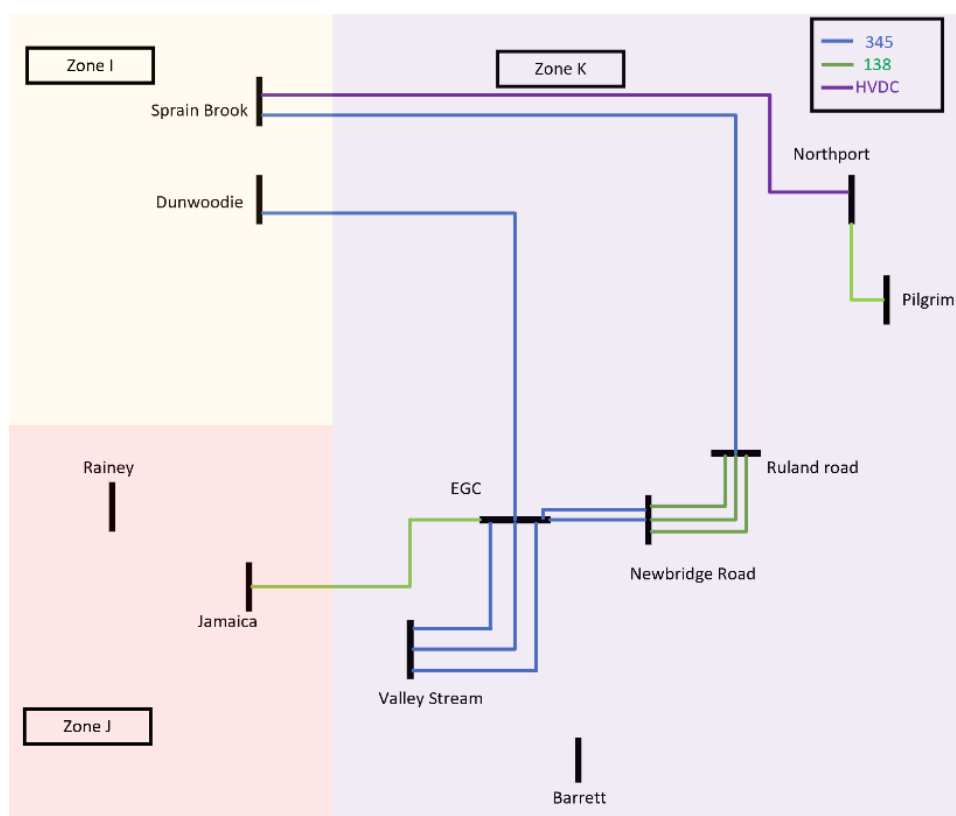
NextEra Core 6 proposal consists of the following components:

- Build a Northport Converter Station – Sprain Brook Converter Station 320 kV DC line
- Build a proposed East Garden City – Dunwoodie 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build a PAR-controlled East Garden City – Jamaica 138 kV transmission line
- Build three proposed East Garden City – proposed Valley Stream 345 kV transmission lines
- Partially reconductor the Newbridge Road – Ruland Road 138 kV lines 561, 562, and 567
- Partially reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV lines 462 and 463 as two 345 kV transmission lines from the proposed East Garden City substation to proposed Newbridge Road substation
- Partially rebuild the Syosset – Oakwood 138 kV transmission line
- Partially rebuild the Syosset – Greenlawn 138 kV transmission line
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (i.e., loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections
- Build two Dunwoodie – proposed Dunwoodie 345 kV connections
- Build two Barrett – proposed Barrett 138 kV connections
- Build three Northport Converter Station – proposed Northport 138 kV transmission lines
- Build a Sprain Brook Converter Station – Sprain Brook 345 kV transmission line
- Build two Northport – proposed Northport 138 kV connections
- Build a Newbridge Road 138 kV – Newbridge Road 345 kV connection
- Build a Pilgrim – proposed Northport 138 kV transmission line
- Build an East Garden City 345 kV GIS substation with one 1050 MVA PAR regulating flow on the proposed East Garden City to Dunwoodie transmission line
- Build a Ruland Road 345/138 kV GIS substation with two 345/138 kV transformers
- Build a Valley Stream 345 kV GIS substation with three 345/138 kV transformers

- Build a Northport Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Sprain Brook Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a proposed Barrett 138 kV GIS substation with one PAR regulating flow on the proposed East Garden City – Jamaica 138 kV transmission line
- Build a Rainey 345 kV GIS substation
- Build a Dunwoodie 345 kV GIS substation
- Build a Northport 138 kV GIS substation
- Add two breaker-and-a-half GIS bays to the existing Newbridge Road 345 kV substation
- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install one breaker at the Pilgrim 138 kV substation
- Install shunt reactors at the proposed East Garden City – Dunwoodie 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Terminal upgrades at the West Bus 138 kV and Kings 138 kV substations
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install reactor at the Shore Road 138 kV substation to be five blocks of 50 MVAR
- Re-terminate the Northport – Pilgrim 138 kV lines 672, 677, and 679 at the proposed Northport 138 kV substation
- Re-terminate the Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate the Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate the Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Mott Haven – Rainey East 345 kV transmission line at the proposed Rainey 345 kV substation
- Re-terminate the “901” PAR transmission line at the East Garden City 138 kV substation
- Re-terminate the Barrett – Freeport 138 kV line 459 at the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 at the Valley Stream 138 kV substation

- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation
- Add two breaker-and-a-half bays at the existing Sprain Brook 345 kV substation
- Retire the Valley Stream 138 kV lines 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV lines 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 7: T041 NextEra Core 6 Major Project Components (Refer to the description above for complete list of project components)



T042 NextEra Core 7

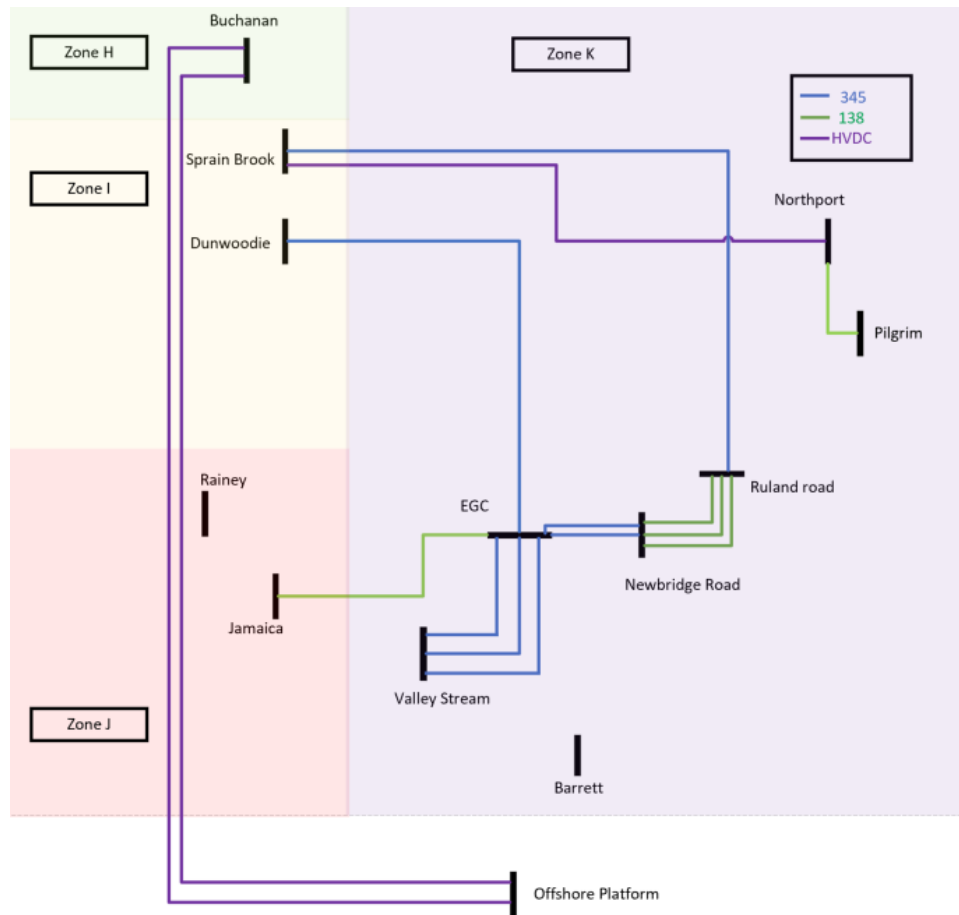
NextEra Core 7 proposal consists of the following components:

- Build a proposed East Garden City – Dunwoodie 345 kV transmission line
- Build a proposed East Garden City – Sprain Brook 345 kV transmission line
- Build a proposed East Garden City – proposed Farragut 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build an East Garden City – Jamaica 138 kV transmission line (includes a “905” PAR)
- Build a proposed Farragut – Sprain Brook 345 kV transmission line
- Build a Barrett Converter Station – Buchanan Converter Station 320 kV DC line
- Build a Northport Converter Station – Sprain Brook Converter Station 320 kV DC line
- Build three proposed East Garden City – proposed Valley Stream 345 kV transmission lines
- Partially reconductor the Newbridge Road – Ruland Road 138 kV lines 561, 562, and 567
- Partially reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV lines 462 and 463 as two 345 kV transmission lines from the proposed East Garden City substation to the proposed Newbridge Road substation
- Partially rebuild the Syosset – Oakwood 138 kV transmission line
- Partially rebuild the Syosset – Greenlawn 138 kV transmission line
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (i.e., loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections
- Build two Dunwoodie – proposed Dunwoodie 345 kV connections
- Build two Barrett – proposed Barrett 138 kV connections
- Build two Farragut – proposed Farragut 345 kV connections
- Build three Northport Converter Station – proposed Northport 138 kV transmission lines
- Build a Sprain Brook Converter Station – Sprain Brook 345 kV transmission line
- Build two Northport – proposed Northport 138 kV connections
- Build a Newbridge Road 138 kV – Newbridge Road 345 kV connection

- Build a Pilgrim – proposed Northport 138 kV transmission line
- Build a Holbrook – Pilgrim 138 kV transmission line
- Build three Barrett Converter Station – proposed Barrett 138 kV transmission lines
- Build a Buchanan Converter Station – Buchanan 345 kV transmission line
- Build an East Garden City 345 kV GIS substation with two 1050 MVA PARs regulating flows on the East Garden City to Farragut and East Garden City to Sprain Brook transmission lines
- Build a Ruland Road 345/138 kV GIS substation with two 345/138 kV transformers and one 1050 MVA PAR regulating flows on the Ruland Rd to Sprain Brook transmission line
- Build a Valley Stream 345 kV GIS substation with three 345/138 kV transformers
- Build a Northport Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Sprain Brook Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Barrett Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Buchanan Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Barrett 138 kV GIS substation with one PAR regulating flow on the proposed East Garden City – Jamaica 138 kV transmission line
- Build a Rainey 345 kV GIS substation
- Build a Farragut 345 kV GIS substation
- Build a Dunwoodie 345 kV GIS substation
- Build a Northport 138 kV GIS substation
- Add two breaker-and-a-half GIS bays at the existing Newbridge Road 345 kV substation
- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install two breakers at the Pilgrim 138 kV substation
- Install shunt reactors at the proposed East Garden City – Sprain Brook 345 kV, proposed East Garden City – Dunwoodie 345 kV, proposed East Garden City – proposed Farragut 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed Farragut – Sprain Brook 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install a reactor at the Shore Road 138 kV substation to be five blocks of 50 MVAR
- Re-terminate the Northport – Pilgrim 138 kV lines 672, 677, and 679 at the proposed Northport 138 kV substation

- Re-terminate the Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate the Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate the Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Mott Haven – Rainey East 345 kV transmission line at the proposed Rainey 345 kV substation
- Re-terminate the Barrett – Freeport 138 kV line 459 at the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 at the Valley Stream 138 kV substation
- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation
- Add two breaker-and-a-half bays at the existing Sprain Brook 345 kV substation
- Retire the Valley Stream 138 kV lines 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV lines 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 8: T042 NextEra Core 7 Major Project Components (Refer to the description above for complete list of project components)



T043 NextEra Enhanced 1

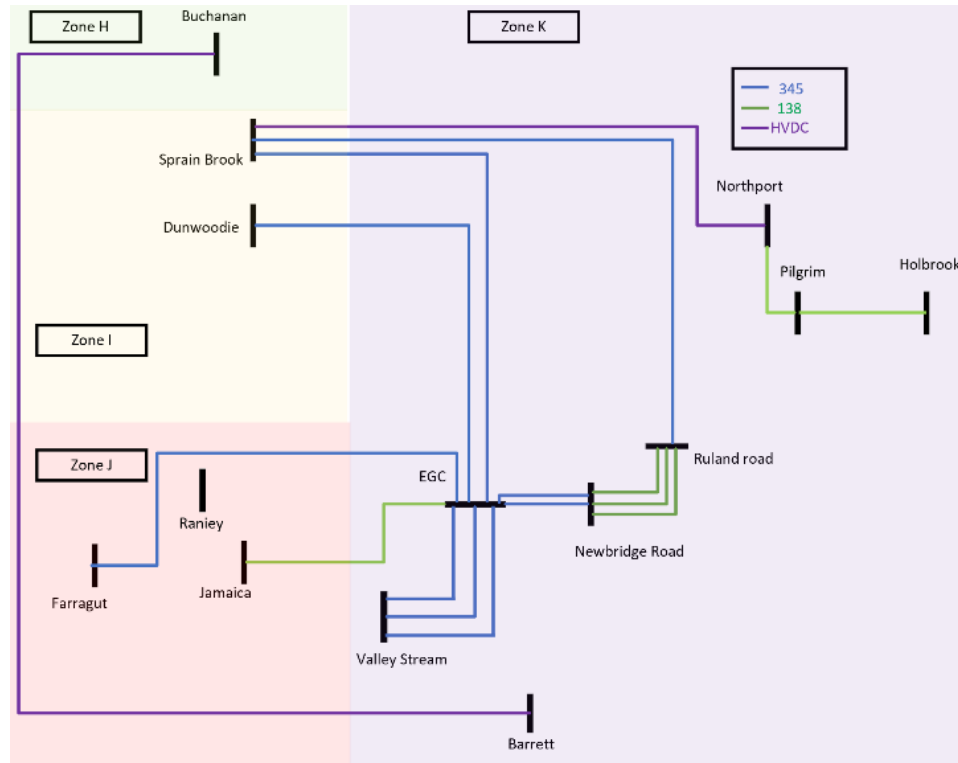
NextEra Enhanced 1 proposal consists of the following components:

- Build a proposed East Garden City – Dunwoodie 345 kV transmission line
- Build a proposed East Garden City – Sprain Brook 345 kV transmission line
- Build a proposed East Garden City – proposed Farragut 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build a PAR-controlled East Garden City – Jamaica 138 kV transmission line
- Build a proposed Farragut – Sprain Brook 345 kV transmission line
- Build a Barrett Converter Station – Buchanan Converter Station 320 kV DC line
- Build a Northport Converter Station – Sprain Brook Converter Station 320 kV DC line
- Build three proposed East Garden City – proposed Valley Stream 345 kV transmission lines
- Partially reconductor the Newbridge Road – Ruland Road 138 kV lines 561, 562, and 567
- Partially reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV lines 462 and 463 as two 345 kV transmission lines from the proposed East Garden City substation to proposed Newbridge Road substation
- Partially rebuild the Syosset – Oakwood 138 kV transmission line
- Partially rebuild the Syosset – Greenlawn 138 kV transmission line
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (i.e., loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections
- Build two Dunwoodie – proposed Dunwoodie 345 kV connections
- Build two Barrett – proposed Barrett 138 kV connections
- Build two Farragut – proposed Farragut 345 kV connections
- Build three Northport Converter Station – proposed Northport 138 kV transmission lines
- Build a Sprain Brook Converter Station – Sprain Brook 345 kV transmission line
- Build two Northport – proposed Northport 138 kV connections
- Build a Newbridge Road 138 kV – Newbridge Road 345 kV connection

- Build a Pilgrim – proposed Northport 138 kV transmission line
- Build a Holbrook – Pilgrim 138 kV transmission line
- Build three Barrett Converter Station – proposed Barrett 138 kV transmission lines
- Build a Buchanan Converter Station – Buchanan 345 kV transmission line
- Build an East Garden City 345 kV GIS substation with two 1050 MVA PARs regulating flows on the East Garden City to Farragut and East Garden City to Sprain Brook transmission lines
- Build a Ruland Road 345/138 kV GIS substation with two 345/138 kV transformers and one 1050 MVA PAR regulating flows on the Ruland Rd to Sprain Brook transmission line
- Build a Valley Stream 345 kV GIS substation with three 345/138 kV transformers
- Build a Northport Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Sprain Brook Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Barrett Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Buchanan Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a proposed Barrett 138 kV GIS substation with one PAR regulating flow on the proposed East Garden City – Jamaica 138 kV transmission line
- Build a Rainey 345 kV GIS substation
- Build a Farragut 345 kV GIS substation
- Build a Dunwoodie 345 kV GIS substation
- Build a Northport 138 kV GIS substation
- Add two breaker-and-a-half GIS bays at the existing Newbridge Road 345 kV substation
- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install two breakers at the Pilgrim 138 kV substation
- Install shunt reactors at the proposed East Garden City – Sprain Brook 345 kV, proposed East Garden City – Dunwoodie 345 kV, proposed East Garden City – proposed Farragut 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed Farragut – Sprain Brook 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV transmission lines
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install reactor at the Shore Road 138 kV substation to be five blocks of 50 MVAR
- Re-terminate the Northport – Pilgrim 138 kV lines 672, 677, and 679 at the proposed Northport 138 kV substation

- Re-terminate the Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate the Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate the Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Mott Haven – Rainey East 345 kV transmission line at the proposed Rainey 345 kV substation
- Re-terminate the Barrett – Freeport 138 kV line 459 at the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 at the Valley Stream 138 kV substation
- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation
- Expand the existing Sprain Brook 345 kV substation by adding two breaker-and-a-half bays
- Retire the Valley Stream 138 kV lines 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV lines 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 9: T043 NextEra Enhanced 1 Major Project Components (Refer to the description above for complete list of project components)



T044 NextEra Enhanced 2

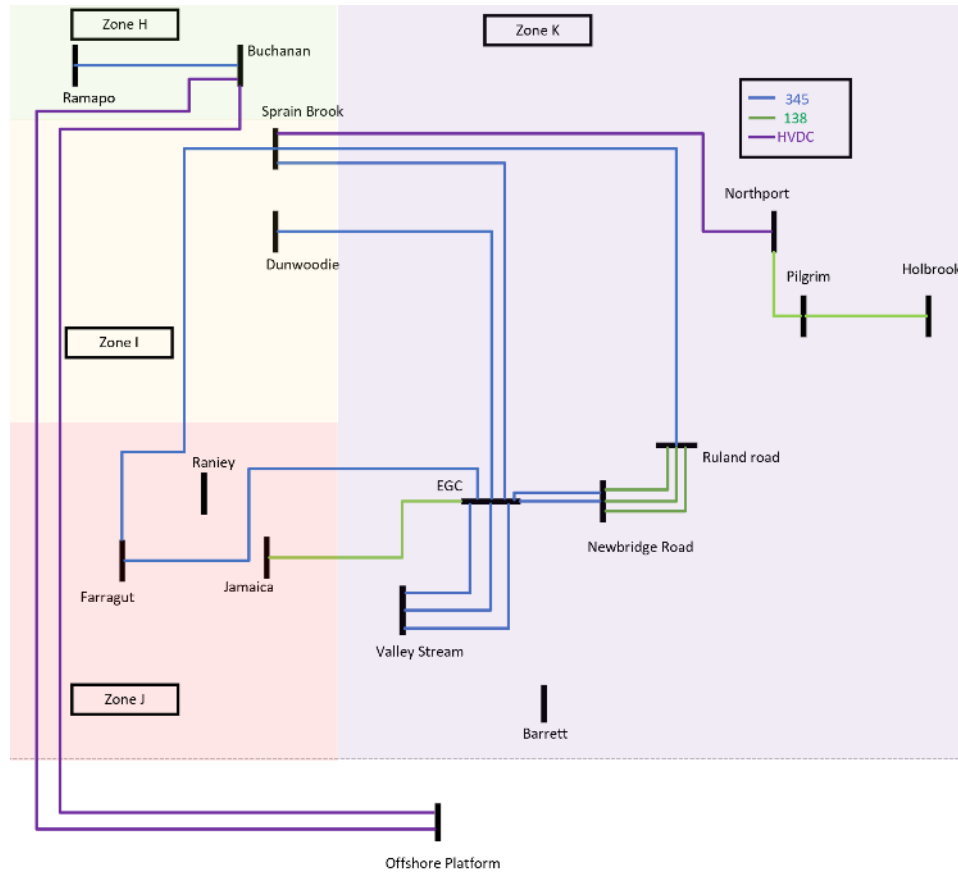
NextEra Enhanced 2 proposal consists of the following components:

- Build a proposed East Garden City – Dunwoodie 345 kV transmission line
- Build a proposed East Garden City – Sprain Brook 345 kV transmission line
- Build a proposed East Garden City – proposed Farragut 345 kV transmission line
- Build a proposed Ruland Road – Sprain Brook 345 kV transmission line
- Build a PAR-controlled East Garden City – Jamaica 138 kV transmission line
- Build a proposed Farragut – Sprain Brook 345 kV transmission line
- Build a Northport Converter Station – Sprain Brook Converter Station 320 kV DC line
- Build three proposed East Garden City – proposed Valley Stream 345 kV transmission lines
- Partially reconductor the Newbridge Road – Ruland Road 138 kV lines 561, 562, and 567
- Partially reconductor the Central Islip – Hauppauge 138 kV transmission line
- Rebuild the existing East Garden City – Newbridge Road 138 kV lines 462 and 463 as two 345 kV transmission lines from the proposed East Garden City substation to the proposed Newbridge Road substation
- Partially rebuild the Syosset – Oakwood 138 kV transmission line
- Partially rebuild the Syosset – Greenlawn 138 kV transmission line
- Partially rebuild the Newbridge – Locust Grove 138 kV transmission line
- Loop the Newbridge Road – Bagatelle 138 kV line 563 into the proposed Ruland Road 138 kV substation
- Modify the East Garden City – Sprain Brook 345 kV transmission line (i.e., loop Y49 to proposed EGC 345 kV substation by building four East Garden City – proposed East Garden City 345 kV connections)
- Build three Valley Stream 138 kV – proposed Valley Stream 345 kV connections
- Build two Ruland Road – proposed Ruland Road 138 kV connections
- Build three Rainey – proposed Rainey 345 kV connections
- Build two Dunwoodie – proposed Dunwoodie 345 kV connections
- Build two Barrett – proposed Barrett 138 kV connections
- Build two Farragut – proposed Farragut 345 kV connections
- Build three Northport Converter Station – proposed Northport 138 kV transmission lines
- Build a Sprain Brook Converter Station – Sprain Brook 345 kV transmission line
- Build two Northport – proposed Northport 138 kV connections
- Build a Newbridge Road 138 kV – Newbridge Road 345 kV connection

- Build a Pilgrim – proposed Northport 138 kV transmission line
- Build a Holbrook – Pilgrim 138 kV transmission line
- Build two Offshore Platform – Buchanan Converter Station (1,200 MW HVDC Symmetrical Monopole) transmission lines
- Build two Buchanan Converter Station – Buchanan 345 kV transmission lines
- Build two proposed Buchanan – Buchanan 345 kV connections
- Build a proposed Buchanan – Ramapo 345 kV transmission line
- Build a Corona – Jamaica 138 kV transmission line with one 283 MVA PAR
- Build an East Garden City 345 kV GIS substation with two 1050 MVA PARs regulating flows on the East Garden City to Farragut and East Garden City to Sprain Brook transmission lines
- Build a Ruland Road 345/138 kV GIS substation with two 345/138 kV transformers and one 1050 MVA PAR regulating flows on the Ruland Rd to Sprain Brook transmission line
- Build a Valley Stream 345 kV GIS substation with three 345/138 kV transformers
- Build a Northport Converter Station (1,200 MW HVDC VSC Converter Station)
- Build a Sprain Brook Converter Station (1,200 MW HVDC VSC Converter Station)
- Build two Buchanan Converter Stations (1,200 MW HVDC VSC Converter Station x 2)
- Build two Offshore Converter Stations to deliver energy from future offshore wind generators to the proposed Buchanan 345 kV substation
- Build a Buchanan 345 kV GIS substation with two PARs
- Build a proposed Barrett 138 kV GIS substation with one PAR regulating flow on the proposed East Garden City – Jamaica 138 kV transmission line
- Build a Rainey 345 kV GIS substation
- Build a Farragut 345 kV GIS substation
- Build a Dunwoodie 345 kV GIS substation
- Build a Northport 138 kV GIS substation
- Add two breaker-and-a-half GIS bays at the existing Newbridge Road 345 kV substation
- Install two 1050 MVA PARs at the Buchanan 345 kV substation on the line to Eastview
- Install one PAR with summer rating of 283 MVA at the Corona 138 kV substation
- Install one 345/138 kV transformer at the Newbridge Road 345/138 kV substation
- Install one 324 MVA PAR at the East Garden City 138 kV substation
- Install one breaker at the Ruland Road 138 kV substation
- Install two breakers at the Pilgrim 138 kV substation

- Install shunt reactors at the proposed East Garden City – Sprain Brook 345 kV, proposed East Garden City – Dunwoodie 345 kV, proposed East Garden City – proposed Farragut 345 kV, proposed Ruland Road – Sprain Brook 345 kV, proposed Farragut – Sprain Brook 345 kV, proposed Buchanan substation – Ramapo 345 kV, proposed East Garden City – proposed Valley Stream 345 kV, and proposed East Garden City – proposed Newbridge Road 345 kV
- Modify the reactor at the Elwood 138 kV substation to be two blocks of 40 MVAR
- Install a reactor at the Shore Road 138 kV substation to be five blocks of 50 MVAR
- Re-terminate the Northport – Pilgrim 138 kV lines 672, 677, and 679 at the proposed Northport 138 kV substation
- Re-terminate the Ruland Road 138 kV lines 562 and 662 at the proposed Ruland Road 138 kV substation
- Re-terminate the Barrett – Valley Stream 138 kV lines 291 and 292 at the proposed Barrett 138 kV substation
- Re-terminate the Mott Haven – Rainey East 345 kV transmission line at the proposed Rainey 345 kV substation
- Re-terminate the Dunwoodie – Pleasantville 345 kV lines W89 and W90 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Dunwoodie – Sprain Brook 345 kV line W75 at the proposed Dunwoodie 345 kV substation
- Re-terminate the Eastview – Buchanan (North) “W93” transmission line at the proposed Buchanan 345 kV substation
- Re-terminate the Millwood West – Buchanan (South) “W97” transmission line at the proposed Buchanan 345 kV substation
- Re-terminate the Barrett – Freeport 138 kV line 459 at the proposed Barrett 138 kV substation
- Re-terminate the Barrett – Valley Stream line 292 at the Valley Stream 138 kV substation
- Re-terminate the Newbridge Road – Ruland Road 138 kV line 561 at the Newbridge Road 138 kV substation
- Re-terminate the Newbridge Road – Bethpage 138 kV line 563 at the Newbridge Road 138 kV substation
- Add two breaker-and-a-half bays at the existing Sprain Brook 345 kV substation
- Retire the Valley Stream 138 kV line 261 and 262
- Retire the East Garden City – Newbridge Road 138 kV line 465 and 467
- Modify the Newbridge Road 138 kV substation

Figure 10: T044 NextEra Enhanced 2 Major Project Components (Refer to the description above for complete list of project components)



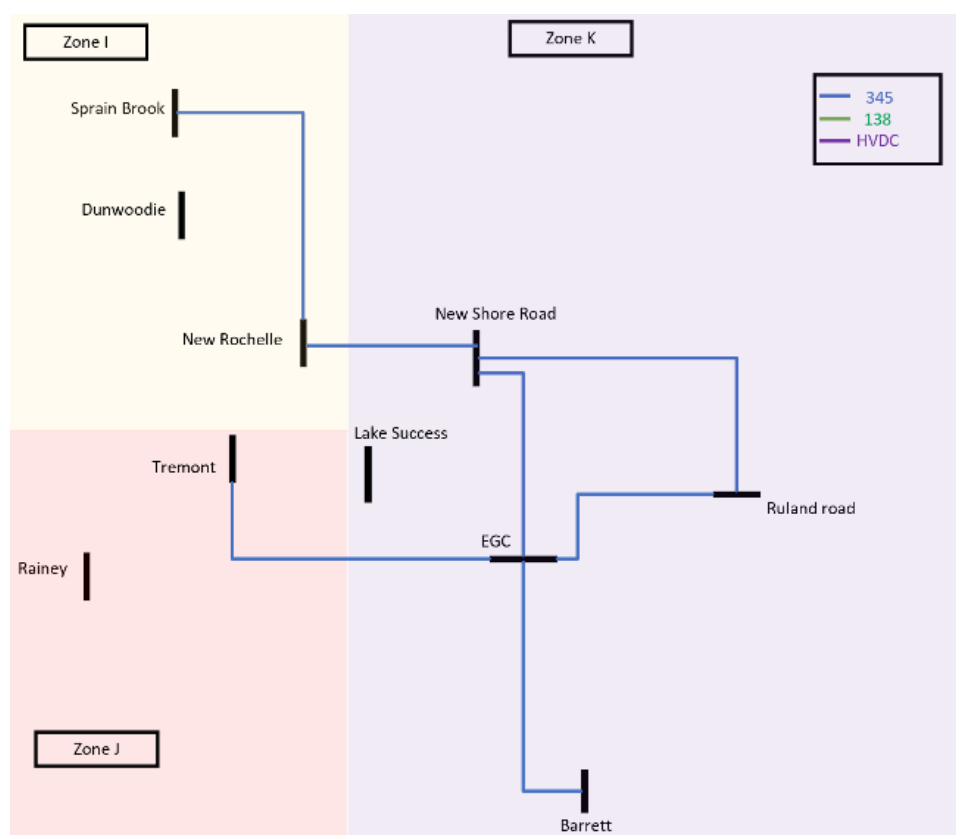
T047 Propel Base Solution 1

Propel Base Solution 1 proposal consists of the following components:

- Build a proposed Barrett 345 kV substation with two 345/138 kV transformers in series with 138 kV 540 MVA PARs controlling flow towards Barrett and one 100 MVAR shunt reactor
- Build a proposed New Shore Road 345 kV station with one 345 kV 900 MVA PAR controlling flow towards the New Rochelle 345 kV station, one 345/138 kV transformer in series with a 138 kV 540 MVA PAR controlling flow towards the existing Shore Road 345/138 kV substation, and two 150 MVAR shunt reactors
- Build a proposed Ruland Road 345 kV substation in a ring configuration with three 345/138 kV transformers to connect to the existing Ruland Road 138 kV substation, one 345 kV 650 MVA PAR controlling flow towards the East Garden City 345 kV substation; and two 150 MVAR shunt reactors
- Build a proposed New Rochelle 345 kV transition station
- Build a proposed underground Barrett – East Garden City 345 kV AC line
- Build a proposed PAR-controlled 345 kV tie line from East Garden City 345 kV substation interconnected to the existing Tremont 345 kV substation
- Build a proposed underground/submarine Ruland Road – New Shore Road – New Rochelle-Sprain Brook 345 kV AC line
- Convert and reconfigure the existing Ruland Road – New Bridge 138 kV circuit 3 and New Bridge – East Garden City 138 kV circuit 4 to a Ruland Road – East Garden City 345 kV line, bypassing the existing New Bridge 138 kV substation
- Install PASS Breakers in place of breakers 1E and 6E at the existing Rainey 345 kV substation
- Modify the East Garden City 345 kV substation to a breaker-and-a-half configuration with a PAR-controlled connection of the existing Y-49 345 kV line (i.e., the two existing Y49 345/138 kV transformers will be used to connect the East Garden City 345 kV substation to the existing East Garden City 138 kV substation)
- Install one 120 MVAR shunt reactor and one 300 MVAR shunt reactor at the East Garden City 345 kV substation.
- Install one 100 MVAR switch shunt reactor at the Sprain Brook 345 kV substation
- Install two series reactors on the Ruland Road – New Bridge 138 kV circuit 1 & circuit 2 at the Ruland Road substation
- Install two series reactors on the East Garden City – New Bridge 138 kV circuit 1 & circuit 2 at the East Garden City substation

- Install PASS breakers (i.e., two breakers in series) in place of breaker CB-1460 at the existing New Bridge 138 kV substation to address the stuck breaker fault
- Install a new circuit breaker between the Holbrook 138/69 kV transformers 2 & 2A and the Holbrook – Ruland Road 138 kV line (Line 138-882) at the existing Holbrook 138 kV substation
- Upgrade Central Islip-Hauppauge 138 kV line (Line 138-889)
- Modify relay systems to eliminate P5 contingencies at multiple substations, including Valley Stream 138 kV substation, Lake Success 138 kV substation, East Garden City 138 kV substation, and Barrett 138 kV substation

Figure 11: T047 Propel Base Solution 1 Major Project Components (Refer to the description above for complete list of project components)



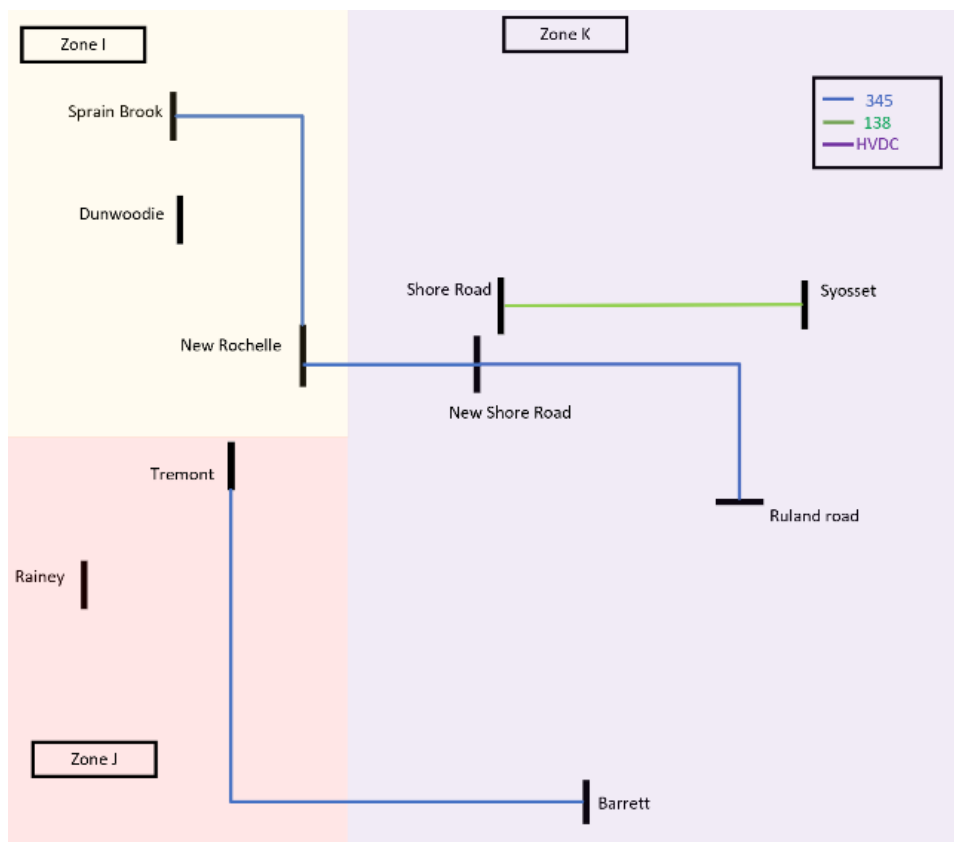
T048 Propel Base Solution 2

Propel Base Solution 2 proposal consists of the following components:

- Build a proposed Barrett 345/138 kV substation in a ring configuration connecting to the proposed 138 kV Barrett substation to accommodate offshore wind projects with three 345/138 transformers, one 345 kV 900 MVA PAR controlling flow to Tremont, and one 300 MVAR shunt reactor
- Build a proposed New Shore Road 345 kV transition station together with one 200 MVAR shunt reactor
- Build a proposed Ruland Road 345/138 kV substation in ring configuration interconnecting to existing Ruland Road 138 kV substation with three 345/138 kV transformers, one 345 kV 900 MVA PAR controlling flow towards the proposed New Shore Road 345 kV substation, and one 200 MVAR shunt reactor
- Build a proposed New Rochelle 345 kV transition station
- Build a proposed underground Barrett – Tremont 345 kV AC line
- Build a proposed underground/submarine Ruland Road – New Shore Road – New Rochelle – Sprain Brook 345 kV AC line
- Build a Syosset – Shore Rd 138 kV land cable with one 138 kV 517 MVA PAR at the Syosset 138 kV substation
- Install a PASS breaker in place of breaker 1E at the existing Rainey 345 kV substation
- Install one 150 MVAR switch shunt reactor at the existing Sprain Brook 345 kV substation
- Install one 150 MVAR switch shunt reactor at the existing East Garden City 345 kV substation
- Install one 50 MVAR switch shunt reactor at the existing Shore Road 138 kV substation
- Install three series reactors on the Ruland Road – New Bridge 138 kV circuits 1, 2 & 3 at the Ruland Road substation
- Install three series reactors on the East Garden City – New Bridge 138 kV circuits 1, 2 & 3 at the East Garden City substation
- Reinforce existing 903 PAR to 420 MVA at the Lake Success substation
- Reinforce the Jamaica-Lake Success 138 kV cable
- Install a circuit breaker between the Holbrook 138/69 kV transformers 2 & 2A and the Holbrook – Ruland Road 138 kV line (Line 138-882) at the existing Holbrook 138 kV substation
- Install a PASS breaker in place of breaker 1330 at the existing Barrett 138 kV substation
- Upgrade Central Islip-Hauppauge 138 kV line (Line 138-889)

- Modify relay systems to eliminate P5 contingencies at multiple substations, including Valley Stream 138 kV substation, East Garden City 138 kV substation, and Barrett 138 kV substation

Figure 12: T048 Propel Base Solution 2 Major Project Components (Refer to the description above for complete list of project components)



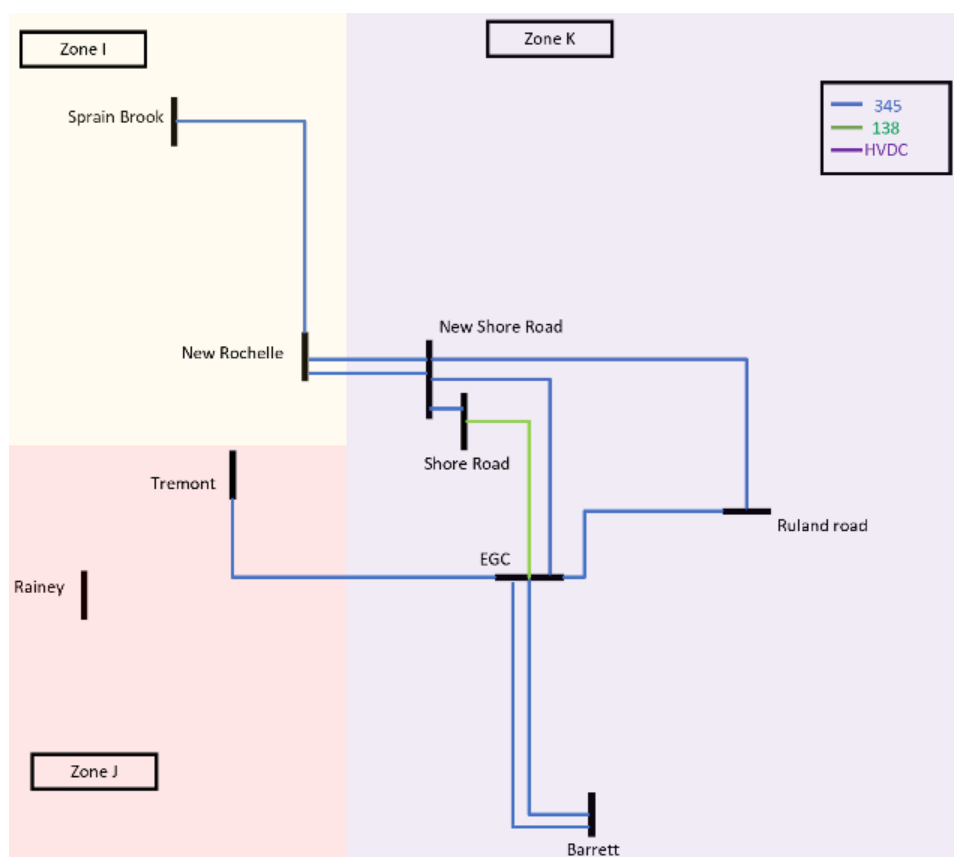
T049 Propel Base Solution 3

Propel Base Solution 3 proposal consists of the following components:

- Build a proposed Barrett 345 kV substation in a ring configuration with three 345/138 kV transformers in series with 138 kV 540 MVA PARs controlling flow towards Barrett and two 100 MVAR shunt reactors
- Build a proposed New Shore Road 345 kV station with one 345 kV 900 MVA PAR controlling flow towards the New Rochelle 345 kV station, one 345/138 kV transformer in series with a 138 kV 540 MVA PAR controlling flow towards the existing Shore Road 345/138 kV substation, and two 150 MVAR shunt reactors
- Build a proposed Ruland Road 345 kV substation in ring configuration connecting to existing Ruland Rd 138 kV substation with three 345/138 kV transformers, one 345 kV 650 MVA PAR controlling flow towards the East Garden City 345 kV substation, and two 150 MVAR shunt reactors
- Build a proposed New Rochelle 345 kV transition substation
- Build two proposed underground Barrett – East Garden City 345 kV AC lines
- Build a 345 kV tie line with a 900 MVA PAR from the East Garden City 345 kV substation interconnected to the existing Tremont 345 kV substation
- Build one proposed underground East Garden City – New Shore Road 345 kV AC line
- Build one proposed underground East Garden City – New Shore Road 138 kV AC line
- Build one proposed underground Ruland Road – Shore Road 345 kV AC line
- Build one proposed underground/submarine Shore Road – New Rochelle – Sprain Brook 345 kV AC line
- Convert and reconfigure the existing Ruland Road – New Bridge 138 kV circuit 3 and New Bridge – East Garden City 138 kV circuit 4 to a Ruland Road – East Garden City 345 kV line, bypassing the existing New Bridge 138 kV substation
- Install PASS breakers in place of breakers 1E and 6E at the existing Rainey 345 kV substation
- Modify the East Garden City 345 kV substation to a breaker-and-a-half configuration with a PAR-controlled connection of the existing Y-49 345 kV line (i.e., the two existing Y49 345/138 kV transformers will be used to connect the East Garden City 345 kV substation to the existing East Garden City 138 kV substation)
- Install one 100 MVAR switch shunt reactor at Sprain Brook 345 kV substation

- Install two series reactors on the Ruland Road – New Bridge 138 kV circuit 1 & circuit 2 at the Ruland Road substation
- Install two series reactors on East Garden City – New Bridge 138 kV circuit 1 & circuit 2 at the East Garden City substation
- Install a PASS breaker (i.e., two breakers in series) in place of breaker CB-1460 at the existing New Bridge 138 kV substation to address the stuck breaker fault
- Install a circuit breaker between the Holbrook 138/69 kV transformers 2 & 2A and the Holbrook-Ruland Road 138 kV line (Line 138-882) at the existing Holbrook 138 kV substation.
- Upgrade the Central Islip – Hauppauge 138 kV line (Line 138-889)
- Modify relay systems to eliminate P5 contingencies at multiple substations, including Valley Stream 138 kV substation, Lake Success 138 kV substation, East Garden City 138 kV substation, and Barrett 138 kV substation.

Figure 13: T049 Propel Base Solution 3 Major Project Components (Refer to the description above for complete list of project components)



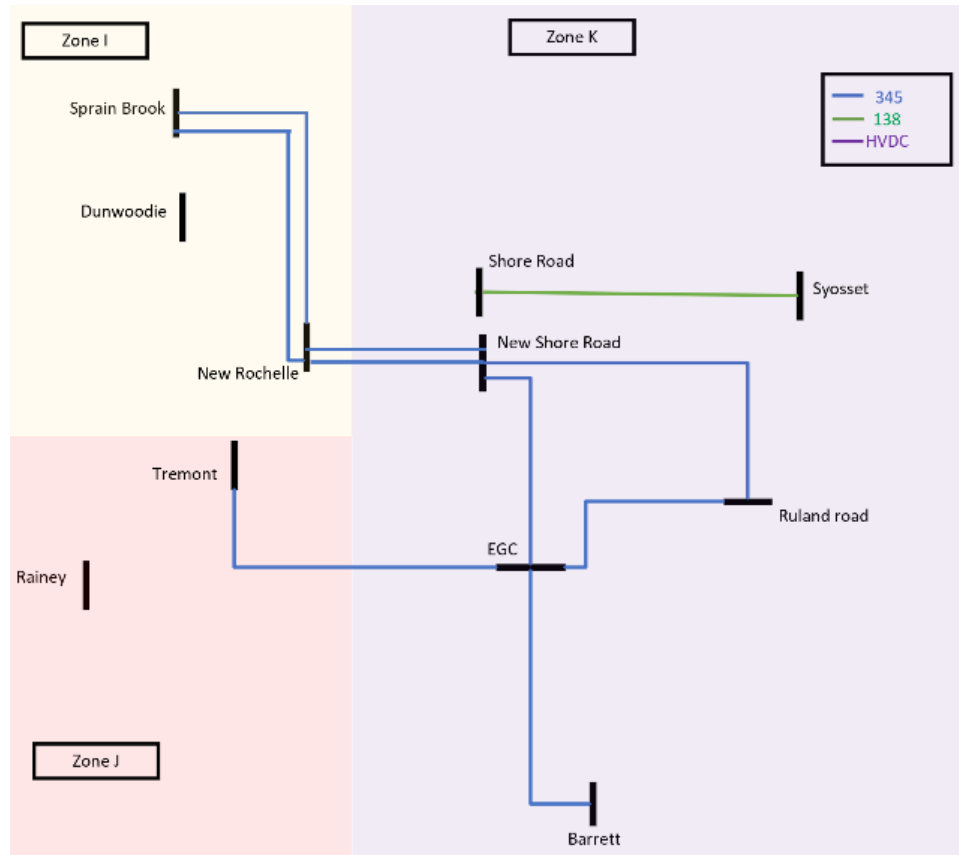
T051 Propel Alternate Solution 5

Propel Alternate Solution 5 proposal consists of the following components:

- Build a proposed Barrett 345 kV substation with two 345/138 transformers in series with 138 kV 540 MVA PARs controlling flow towards proposed OSW Developer 138 kV Barrett substation, and one 100 MVAR shunt reactor
- Build a proposed New Shore Road 345 kV substation with a 345/138 kV transformer in series with a 138 kV PAR to connect to the existing Shore Road 345/138 kV substation, two 345 kV 900 MVA PARs controlling flow towards the New Rochelle 345 kV station, two 150 MVAR shunt reactors, and one 100 MVAR shunt reactor
- Build a proposed Ruland Road 345 kV substation in ring configuration with three 345/138 kV transformers connecting to the existing Ruland Road 138 kV substation, one 345 kV 650 MVA PAR controlling flow towards the East Garden City 345 kV substation, and two 150 MVAR shunt reactors
- Build a proposed New Rochelle 345 kV transition substation
- Build one proposed underground Barrett – East Garden City 345 kV AC line
- Build a 345 kV tie line with a 900 MVA PAR from the East Garden City 345 kV substation interconnected to the existing Tremont 345 kV substation
- Build a proposed underground East Garden City – New Shore Road 345 kV AC line
- Build a proposed underground Ruland Road – New Shore Road 345 kV AC line
- Build two proposed underground/submarine New Shore Road – New Rochelle – Sprain Brook 345 kV AC lines
- Build a 138 kV line with a 400 MVA PAR from the existing Syosset 138 kV substation to the Shore Road 345/138 kV substation
- Convert and reconfigure the existing Ruland Road – New Bridge 138 kV circuit 3 and New Bridge – East Garden City 138 kV circuit 4 to a proposed Ruland Road – East Garden City 345 kV line, bypassing the existing New Bridge 138 kV substation
- Install PASS breakers (i.e., two breakers in series) in place of breakers 1E and 6E at the existing Rainey 345 kV substation
- Modify the East Garden City 345 kV substation to a breaker-and-a-half configuration with a PAR-controlled connection of the existing Y-49 345 kV line (i.e., the two existing Y49 345/138 kV transformers will be used to connect the East Garden City 345 kV substation to the existing East Garden City 138 kV substation)
- Install two 100 MVAR switch shunt reactors at the Sprain Brook 345 kV substation

- Install series reactors on the following five existing 138 kV lines: Ruland Road – New Bridge circuit 1 & circuit 2, East Garden City – New Bridge circuit 1 & circuit 2, and East Garden City – Valley Stream circuit 1.
- Upgrade the 2.5-mile segment to each of the existing Syosset – Greenlawn 138 kV and the Syosset – Oakwood 138 kV lines.
- Install a second PAR at the existing 138 kV Northport substation.
- Install a PASS breaker (i.e., two breakers in series) in place of breaker CB-1460 at the existing New Bridge 138 kV substation to address the stuck breaker fault
- Install a circuit breaker between the Holbrook 138/69 kV transformers 2 & 2A and the Holbrook – Ruland Road 138 kV line (Line 138-882) at the existing Holbrook 138 kV substation
- Upgrade the Central Islip – Hauppauge 138 kV line (Line 138-889)
- Modify relay systems to eliminate P5 contingencies at multiple substations, including Valley Stream 138 kV substation, Lake Success 138 kV substation, East Garden City 138 kV substation, and Barrett 138 kV substation

Figure 14: T051 Propel Alternate Solution 5 Major Project Components (Refer to the description above for complete list of project components)



T052 Propel Alternate Solution 6

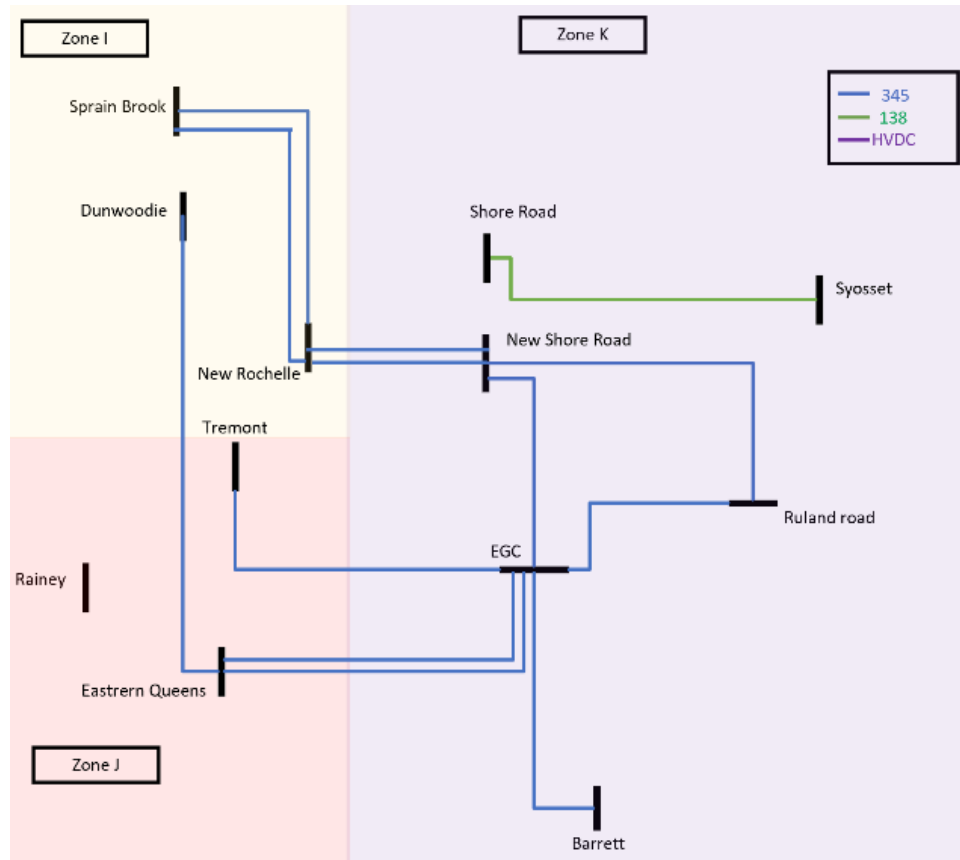
Propel Alternate Solution 6 proposal consists of the following components:

- Build a proposed Barrett 345 kV substation with two 345/138 kV transformers in series with 138 kV 540 MVA PARs controlling flow towards Barrett, and one 100 MVAR shunt reactor
- Build a proposed New Shore Road 345 kV substation with one 345/138 kV transformer in series with a 138 kV 540 MVA PAR controlling flow towards the Shore Road 345/138 kV substation, two 345 kV 900 MVA PARs controlling flow towards the New Rochelle 345 kV substation, two 75 MVAR shunt reactors, and 150 MVAR shunt reactor
- Build a proposed Ruland Road 345 kV substation in a ring configuration with three 345/138 kV transformers to connect to the existing Ruland Road 138 kV substation, one 345 kV 650 MVA PAR controlling flow towards the East Garden City 345 kV substation, and two 150 MVAR shunt reactor
- Build a proposed Eastern Queens 345/138 kV GIS substation in three-ring configurations by tapping the Valley Stream – Jamaica 138 kV line and Lake Success – Jamaica 138 kV line with three 345/138 kV transformers, three 138 kV PARs controlling the flow to the 138 kV transmission system, and one 345 kV 897 MVA PAR controlling flow towards the Dunwoodie 345 kV substation
- Build a proposed underground Barrett – East Garden City 345 kV AC line
- Build two proposed underground East Garden City – Eastern Queens 345 kV AC lines
- Build a proposed underground Eastern Queens – Dunwoodie 345 kV AC line
- Build a proposed underground East Garden City – New Shore Road 345 kV AC line
- Build a proposed underground Ruland Road – New Shore Road 345 kV AC line
- Build two proposed underground/submarine New Shore Road – New Rochelle – Sprain Brook 345 kV AC lines
- Build a Syosset – Shore Rd 138 kV line with one 138 kV PAR at the Syosset substation
- Covert and reconfigure the existing Ruland Road – New Bridge 138 kV circuit 3 and New Bridge – East Garden City 138 kV circuit 4 to a proposed Ruland Road – East Garden City 345 kV line, bypassing the existing New Bridge 138 kV substation
- Upgrade existing Lake Success – Jamaica 138 kV line and Valley Stream – Jamaica 138 kV line and loop them into the proposed Eastern Queens 138 kV substation
- Install PASS breakers (i.e., two breakers in series) in place of breaker 1E and 6E at the existing Rainey 345 kV substation
- Modify the East Garden City 345 kV substation to a breaker-and-a-half configuration with a PAR-controlled connection of the existing Y-49 345 kV line (i.e., the two existing Y49 345/138 kV

transformers will be used to connect the East Garden City 345 kV substation to the existing East Garden City 138 kV substation)

- Install one 120 MVAR shunt reactor and one 300 MVAR shunt reactor
- Install two 75 MVAR switch shunt reactors at the Sprain Brook 345 kV substation
- Install series reactors on the following four existing 138 kV lines: Ruland Road – New Bridge circuit 1 & circuit 2 and New Bride – East Garden City circuit 1 & circuit 2
- Install a PASS breaker (i.e., two breakers in series) in place of breaker CB-1460 at the existing New Bridge 138 kV substation to address the stuck breaker fault
- Install a circuit breaker between the Holbrook 138/69 kV transformers 2 & 2A and the Holbrook – Ruland Road 138 kV line (Line 138-882) at the existing Holbrook 138 kV substation
- Upgrade Central Islip – Hauppauge 138 kV line (Line 138-889)
- Modify relay systems to eliminate P5 contingencies at multiple substations, including Valley Stream 138 kV substation, East Garden City 138 kV substation, and Barrett 138 kV substation

Figure 15: T052 Propel Alternate Solution 6 Major Project Components (Refer to the description above for complete list of project components)



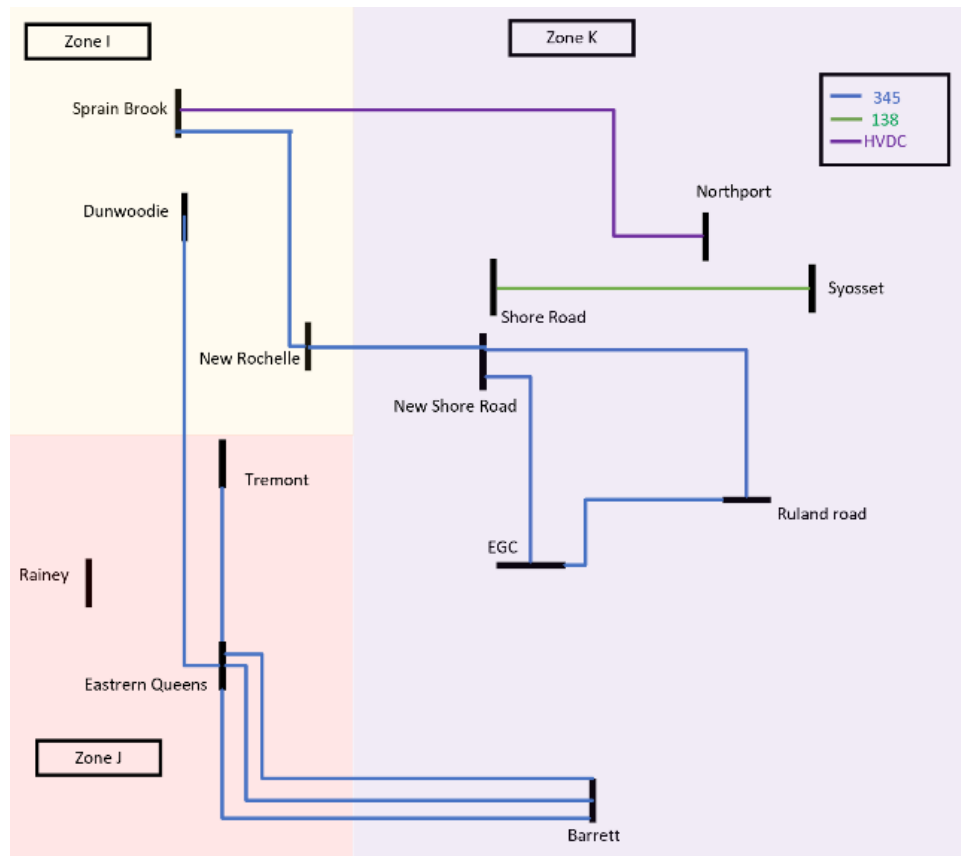
T053 Propel Alternate Solution 7

Propel Alternate Solution 7 proposal consists of the following components:

- Build a proposed Barrett 345 kV substation in a ring configuration connecting to the proposed 138 kV Barrett substation to accommodate offshore wind projects with three 345/138 kV transformers, one 345 kV 897 MVA PAR controlling flow towards the Eastern Queens 138 kV substation, and one 250 MVAR shunt reactor
- Build a proposed New Shore Road 345 kV substation with one 200 MVAR shunt reactor
- Build a proposed Ruland Road 345 kV substation in a ring configuration with three 345/138 kV transformers connecting to existing Ruland Rd 138 kV substation, one 345 kV 897 MVA PAR controlling flow towards the New Shore Road 345 kV substation, and one 200 MVAR shunt reactor
- Build a proposed New Rochelle 345 kV substation
- Build a proposed Eastern Queens 345 kV GIS substation in a three-ring configuration tapping Valley Stream – Jamaica 138 kV line and Lake Success – Jamaica 138 kV line, three 345/138 kV transformers and three 138 kV PARs controlling the flow to the 138 kV transmission system, and one 150 MVAR Shunt reactor
- Build a proposed Northport 345 kV substation in a ring configuration connecting to existing Northport 138 kV substation with ± 320 kV 1250 MVA HVDC converter station, four 345/138 kV transformers, one 200 MVAR shunt capacitor, and two 150 MVAR shunt capacitors
- Build a proposed Sprain Brook HVDC Converter Station connecting to existing Sprain Brook 345 kV substation
- Build three proposed underground Barrett – Eastern Queens 345 kV AC lines
- Build one proposed underground Eastern Queens – Tremont 345 kV AC line
- Build one proposed underground Eastern Queens – Dunwoodie 345 kV AC line
- Build one proposed underground/submarine Ruland Road – New Shore Road – New Rochelle-Sprain Brook 345 kV AC line
- Build one proposed underground Northport – Sprain Brook bi-direction ± 320 kV DC line rated at 1250 MVA
- Build a Syosset – Shore Rd 138 kV AC line with one 138 kV 517 MVA PAR at the Syosset substation
- Install a PASS breaker (i.e., two breakers in series) in place of breakers 1E at the existing Rainey 345 kV substation
- Loop-in the existing 901 & 903 lines into the proposed Eastern Queens 138 kV substations along with reinforcing the 903 cable and PAR.

- Update the existing 138 kV land cable between Valley Stream – Eastern Queens (replacing one section of 901) with one PAR at the Eastern Queens 138 kV substation
- Install one 200 MVAR shunt reactor at the Lake Success 138 kV substation
- Install one 50 MVAR switch shunt reactor at the Shore Road 138 kV substation
- Install one 150 MVAR switch shunt reactor at the Sprain Brook 345 kV substation
- Install three series reactors on the Ruland Road – New Bridge 138 kV circuits 1, 2 & 3 at the Ruland Road substation
- Install three series reactors on Eastern Garden City – New Bridge 138 kV circuits 1, 2 & 3 at the East Garden City substation
- Install a PASS breaker in place of breaker 1330 at the existing Barrett 138 kV substation
- Install a circuit breaker between the Holbrook 138/69 kV transformers 2 & 2A and the Holbrook – Ruland Road 138 kV line (Line 138-882) at the existing Holbrook 138 kV substation
- Upgrade the Central Islip – Hauppauge 138 kV line (Line 138-889)
- Modify relay systems to eliminate P5 contingencies at multiple substations, including Valley Stream 138 kV substation, East Garden City 138 kV substation, and Barrett 138 kV substation

Figure 16: T053 Propel Alternate Solution 7 Major Project Components (Refer to the description above for complete list of project components)



Appendix F: Facility Characterization List

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



June 10, 2022

Characterization of Project Facilities

This document provides the characterization of new transmission facilities and Public Policy Transmission Upgrades¹ comprising the Public Policy Transmission Projects proposed in response to the Long Island Offshore Wind Export Public Policy Transmission Need (“Long Island PPTN”), which is posted on the NYISO website in accordance with Section 31.4.6.5.1 of Attachment Y to the NYISO’s Open Access Transmission Tariff.

In accordance with the requirements of Section 31.4.6.5.1, the NYISO posted an initial list to provide stakeholders an opportunity to review and, as necessary, dispute facility characterizations prior to the start of the NYISO’s evaluation to identify the more efficient or cost-effective solution. The NYISO posted the initial list² on April 11, 2022, and four parties raised disputes³ on the characterization and/or ownership of several facilities. The NYISO considered the information and arguments raised in the written submissions, meetings with the parties, and at a meeting of the ESPWG on June 8, 2022, in updating and finalizing the facility characterizations. An asterisk (*) in the tables below denotes that a dispute was raised regarding the facility characterization and the dispute has not been resolved to satisfaction of a party at the time the NYISO posted the document.

Characterization of Transmission Line Facilities

ID	Transmission Facility ⁴	Facility Characterization	Owner of Existing Facility (if applicable)
L1	Barrett - Buchanan HVDC line	New	N/A
L2	Barrett (proposed) - East Garden City 345 kV line(s)	New	N/A
L3	Barrett (proposed) - Eastern Queens (proposed) 345 kV lines	New	N/A

¹ “Public Policy Transmission Upgrade” is defined in Section 31.1 of Attachment Y to the NYISO’s Open Access Transmission Tariff.

² New York Independent System Operator, Inc., “Initial Characterization of Project Facilities,” available at <https://www.nyiso.com/documents/20142/22968753/LIPPTN-FacilityCharacterization-InitialList.pdf>.

³ The written disputes and comments are available at <https://www.nyiso.com/documents/20142/22968753/Comments-on-Initial-Facility-Characterization.zip>.

⁴ For purpose of reviewing this list, “(proposed)” indicates that the terminal station is labeled as “proposed” in the substation list below.

ID	Transmission Facility ⁴	Facility Characterization	Owner of Existing Facility (if applicable)
L4	Barrett (proposed) - Tremont 345 kV line	New	N/A
L5	Buchanan (proposed) - Ramapo 345 kV line	New	N/A
L6	Central Islip - Hauppauge 138 kV uprate	Upgrade	LIPA
L7	East Garden City - Carle Place 138 kV line reconductor	Upgrade	LIPA
L8	East Garden City - Eastern Queens (proposed) 345 kV lines	New	N/A
L9	East Garden City - Jamaica 138 kV line	New	N/A
L10	East Garden City - Mott Haven 345 kV line	New	N/A
L11	East Garden City - Newbridge Road 345 kV line converting the existing 138 kV line	Upgrade	LIPA
L12	East Garden City – Roslyn 138 kV line reconductor	Upgrade	LIPA
L13	East Garden City - Shore Road (proposed) 345 kV line	New	N/A
L14	East Garden City - Shore Road 138 kV line	New	N/A
L15	East Garden City - Shore Road 345 kV line	New	N/A
L16	East Garden City - Tremont 345 kV line	New	N/A
L17	East Garden City (proposed) - Dunwoodie 345 kV line	New	N/A
L18	East Garden City (proposed) - Farragut 345 kV line	New	N/A
L19	East Garden City (proposed) - Newbridge Road 345 kV lines rebuilding the existing 138 kV lines	Upgrade	LIPA
L20	East Garden City (proposed) - Sprain Brook 345 kV line	New	N/A
L21	Eastern Queens (proposed) - Dunwoodie 345 kV line	New	N/A
L22	Eastern Queens (proposed) - Lake Success 138 kV line uprate	Upgrade	LIPA/ConEd ⁵
L23	Eastern Queens (proposed) - Tremont 345 kV line	New	N/A

⁵ This existing transmission facility is jointly owned, and the proposed upgrade will be assigned to the Transmission Owner that owns the portion to be upgraded.

ID	Transmission Facility ⁴	Facility Characterization	Owner of Existing Facility (if applicable)
L24	Eastern Queens (proposed) - Valley Stream 138 kV uprate	Upgrade	LIPA/ConEd ⁵
L25	Farragut - Sprain Brook 345 kV line	New	N/A
L26	Jamaica - Corona 138 kV line	New	N/A
L27	Lake Success - Jamaica 138 kV uprate	Upgrade	LIPA/ConEd ⁵
L28	Longshore (proposed) - Southgate (proposed) 345 kV lines	New	N/A
L29	Newbridge Road - Locust Grove 138 kV line reconductor	Upgrade	LIPA
L30	Newbridge Road - Ruland Road (proposed) 138 kV line reconductor	Upgrade	LIPA
L31	Newbridge Road - Ruland Road 138 kV lines reconductor	Upgrade	LIPA
L32	Northport (proposed) - Pilgrim 138 kV line	New	N/A
L33	Northport (proposed) - Sprain Brook HVDC line	New	N/A
L34	Northport (proposed)- Dunwoodie 345 kV line	New	N/A
L35	Offshore Platform - Buchanan HVDC line	New	N/A
L36	Pilgrim – Hauppauge 138 kV line reconductor	Upgrade	LIPA
L37	Pilgrim - Holbrook 138 kV line	New	N/A
L38	Ruland Road (proposed) - East Garden City 345 kV line converting the existing Ruland Road - New Bridge - East Garden City 138 kV lines	Upgrade	LIPA
L39	Ruland Road - Newbridge Road 345 kV line converting the existing 138 kV line	Upgrade	LIPA
L40	Ruland Road - Shore Road 138 kV line	New	N/A
L41	Ruland Road (proposed) - Shore Road (proposed) 345 kV line	New	N/A
L42	Ruland Road (proposed) - Sprain Brook 345 kV line	New	N/A
L43	Shore Road - Dunwoodie 345 kV line	New	N/A
L44	Shore Road - Sprain Brook 345 kV line	New	N/A
L45	Shore Road - Syosset 138 kV line	New	N/A

ID	Transmission Facility ⁴	Facility Characterization	Owner of Existing Facility (if applicable)
L46	Shore Road - Syosset 345 kV lines	New	N/A
L47	Shore Road (proposed) - Sprain Brook 345 kV line(s)	New	N/A
L48	Southgate (proposed) - Northgate (proposed) HVDC lines	New	N/A
L49	Sprain Brook - Mott Haven 345 kV line	New	N/A
L50	Syosset - Greenlawn 138 kV line uprate	Upgrade	LIPA
L51	Syosset - Oakwood 138 kV line uprate	Upgrade	LIPA
L52	Syosset - Ruland Road 345 kV line	New	N/A
L53*	Valley Stream (proposed) - East Garden City (proposed) 345 kV lines	New	N/A

Characterization of Substation Facilities

The following list describes and provides characterization of the substations and substation facilities from the proposed Public Policy Transmission Projects. The listing of facilities under a specific substation indicates that they are being installed within either; (i) the new footprint for the substation that is proposed but does not currently exist or (ii) the existing or expanded footprint for the existing substation that a project proposes to modify. Phase angle regulators (“PARs”), series reactors/capacitors, shunt reactors/capacitors, line terminal equipment, and transformers contained in the following list are proposed to be installed within the footprint of the identified substation (regardless of whether the footprint is new, existing, or expanded), unless specifically noted otherwise.

In reviewing the following list, please keep in mind that facilities may be proposed in one project as an installation in a new substation footprint, while similar facilities may be proposed in another project as an installation in an existing or expanded footprint of an existing substation. For example, a project may install a 345 kV ring bus in an expanded footprint of an existing substation, while another project could propose a 345 kV ring bus in a new substation footprint. As a result, it may appear on the list that facilities are being identified as both a new transmission facility and as a Public Policy Transmission Upgrade, but they are different proposed facilities from different projects.

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S1	Existing Barrett 138 kV Substation			
	B1	Breaker and a half GIS ⁶ installation	Upgrade	LIPA
	B2	Breaker installation	Upgrade	LIPA
	P	PAR relocation to breaker and a half GIS	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S2	Existing Corona 345 kV Substation			
	SHR	Shunt reactor(s) installation on proposed line	Upgrade	ConEd
	P1	PAR(s) installation on terminal of proposed line(s)	Upgrade	ConEd
S3	Existing Dunwoodie 345 kV Substation			
	B1	Breaker and a half GIS installation	Upgrade	ConEd
	B2	Additional bay(s) to ring bus	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	ConEd

⁶Gas insulated substation.

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S4	Existing East Garden City 138 kV Substation (LIPA)			
	B1	345 kV Breaker and a half GIS installation	Upgrade	LIPA/NYPA ⁵
	B2	138 kV Breaker(s) installation	Upgrade	LIPA
	T	Transformer(s) installation	Upgrade	LIPA/NYPA ⁵
	SHR1	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	LIPA/NYPA ⁵
	SHR2	Shunt reactor(s) installation on bus	Upgrade	LIPA/NYPA ⁵
	SR	Series reactor(s) installation on terminal of existing line(s)	Upgrade	LIPA
	P1	PAR(s) installation on terminal of proposed 138 kV line(s)	Upgrade	LIPA
	P2	PAR(s) installation on terminal of proposed 345 kV line(s)	Upgrade	LIPA/NYPA ⁵
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S5	Existing East Garden City 345 kV Substation (NYPA)			
	B1	Breaker and a half AIS ⁷ installation	Upgrade	NYPA
	B2	Breaker and a half GIS installation	Upgrade	NYPA
	SHR1	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	NYPA
	SHR2	Shunt reactor(s) installation on terminal of existing line(s)	Upgrade	NYPA
	P	PAR(s) installation on terminal of proposed line(s)	Upgrade	NYPA
S6	Existing Elwood 138 kV Substation			
	SHR	Shunt reactor(s) installation on bus	Upgrade	LIPA
S7	Existing Farragut 345 kV Substation			
	B	Breaker and a half GIS installation	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on terminal of proposed line	Upgrade	ConEd

⁷ Air insulated substation

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S8	Existing Holbrook 138 kV Substation			
	B	Breaker(s) installation	Upgrade	LIPA
S9	Existing Jamaica 138 kV Substation			
	B	Breaker(s) installation	Upgrade	ConEd
S10	Existing Lake Success 138 kV Substation			
	SHR	Shunt reactor(s) installation on terminal of existing line	Upgrade	LIPA
	P1	PAR(s) uprate	Upgrade	LIPA
	P2	PAR relocation to proposed Eastern Queens substation	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S11	Existing Mott Haven 345 kV Substation			
	B	Breaker(s) installation	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	ConEd
S12	Existing Newbridge Road 345/138 kV Substation			
	B1	Breaker and a half 345 kV GIS installation on existing footprint	Upgrade	LIPA
	B2	Breaker(s) installation	Upgrade	LIPA
	B3	Ring bus GIS installation on existing footprint	Upgrade	LIPA
	T	Transformer(s) installation	Upgrade	LIPA
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	LIPA
S13	Existing Northport 138 kV Substation			
	P1	PAR(s) installation between substation buses	Upgrade	LIPA

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S14	Existing Pilgrim 138 kV Substation			
	B	Breaker(s) installation	Upgrade	LIPA
	P	PAR(s) uprate	Upgrade	LIPA
S15	Existing Rainey 345 kV Substation			
	B1	Breaker and a half GIS installation	Upgrade	ConEd
	B2	Breaker(s) installation	Upgrade	ConEd
S16	Existing Ramapo 345 kV Substation			
	B	Additional bay(s) installation	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on proposed line(s)	Upgrade	ConEd
S17	Existing Ruland Road 138 kV Substation			
	B1	Breaker(s) installation	Upgrade	LIPA
	B2	Ring bus 345 kV GIS installation	Upgrade	LIPA
	T	Transformer(s) installation	Upgrade	LIPA
	SHR	Shunt reactor(s) installation on bus	Upgrade	LIPA
	SR	Series reactor(s) installation on terminal of existing line(s)	Upgrade	LIPA
	P	PAR(s) installation on terminal of proposed line(s)	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S18	Existing Shore Road 345/138 kV Substation			
	B1	Breaker and a half 345 kV GIS installation	Upgrade	LIPA
	B2	Breaker(s) installation	Upgrade	LIPA
	SHR1	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	LIPA
	SHR2	Shunt reactor(s) installation on bus	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S19	Existing Sprain Brook 345 kV Substation			
	B	Additional bay(s) installation	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	ConEd
	SR	Series reactor(s) installation on terminal of proposed line(s)	Upgrade	ConEd
S20	Existing Syosset 138 kV Substation			
	B	Ring bus 345 kV GIS installation	Upgrade	LIPA
	T	Transformer(s) installation	Upgrade	LIPA
	SHR	Shunt reactor(s) installation on bus	Upgrade	LIPA
	P	PAR(s) installation on terminal of proposed line(s)	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S21	Existing Valley Stream 138 kV Substation			
	P	PAR relocation to proposed Eastern Queens substation	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S22	Proposed Barrett 345 kV Substation on New Footprint		New	N/A
	B1	Ring bus installation	New	N/A
	B2	Straight bus installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P	PAR(s) installation on terminal of proposed line(s)	New	N/A
S23	Proposed Buchanan 345 kV Substation on New Footprint		New	N/A
	B*	Breaker and a half GIS installation	New	N/A
	SHR*	Shunt reactor(s) installation on terminal of proposed line	New	N/A
	P*	PAR(s) installation on terminal of existing line(s)	New	N/A
S24	Proposed East Garden City 345 kV Substation on New Footprint		New	N/A
	B*	Breaker and a half GIS installation	New	N/A
	SHR*	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P*	PAR(s) installation on terminal of proposed line(s)	New	N/A
S25	Proposed Eastern Queens 345/138 kV Substation on New Footprint		New	N/A
	B	Ring bus installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on bus	New	N/A
	P1	PAR(s) installation on terminals of proposed line(s)	New	N/A
	P2	PAR relocation from existing Valley Stream and Lake Success substations	Upgrade	LIPA

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S26	Proposed Longshore 345/138 kV Substation on New footprint		New	N/A
	B1	Breaker and a half GIS installation	New	N/A
	B2	138 kV GIS breaker(s) installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P	PAR(s) installation on terminal of proposed line(s)	New	N/A
S27	Proposed Northgate 345 kV Substation on New Footprint		New	N/A
	B*	Breaker and a half GIS installation	New	N/A
	H	HVDC station(s)	New	N/A
S28	Proposed Northport 138 kV Substation on New Footprint		New	N/A
	B*	Breaker and a half 138 kV GIS installation	New	N/A
S29	Proposed Northport 345 kV Substation on New Footprint		New	N/A
	B1	Breaker and a half bus 345 kV GIS installation	New	N/A
	B2	Ring bus installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHC	Shunt capacitor(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	H	HVDC station(s)	New	N/A

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S30	Proposed Ruland Road 345/138 kV Substation on New Footprint		New	N/A
	B1*	Breaker and a half 138 kV GIS installation	New	N/A
	B2*	Ring bus 138 kV AIS installation	New	N/A
	B3*	Ring bus 345 kV AIS installation	New	N/A
	T*	Transformer(s) installation	New	N/A
	SHR*	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P*	PAR(s) installation on terminal of proposed line(s)	New	N/A
S31	Proposed Shore Road 345/138 kV Substation on New Footprint		New	N/A
	B	Ring bus installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P	PAR(s) installation on terminal of proposed line(s)	New	N/A
S32	Proposed Southgate 345/138 kV Substation on New Footprint		New	N/A
	B1	Breaker and a half 345 kV GIS installation	New	N/A
	B2	Breaker(s) 138 kV GIS installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	H	HVDC station(s)	New	N/A
S33	Proposed Valley Stream 345 kV on New Footprint		New	N/A
	B*	Breaker and a half GIS installation	New	N/A
	T*	Transformer(s) installation	New	N/A
	SHR*	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A

Notes:

- In accordance with Section 31.4.6.5.1 of Attachment Y to the OATT, the descriptions of the facilities listed above are not expressly linked to any particular Public Policy Transmission Project for the Long Island PPTN, and may describe a facility proposed in one or more proposed Public Policy Transmission Projects. The descriptions are intended to provide enough detail in order for interested parties to reasonably understand the nature of proposed facilities and, as a result, may differ from a Developer's naming convention in its proposal(s).
- Stand-alone transition stations (*e.g.*, underground cable to overhead line junctions) and stand-alone HVDC converter stations are considered as a part of the line and not expressly listed, unless otherwise reflected in list of substation facilities.
- Certain facility elements are not separately broken out in the lists but are characterized as Public Policy Transmission Upgrades. Specifically, the following elements are characterized as Public Policy Transmission Upgrades, unless otherwise noted:
 - o re-terminating existing lines,
 - o decommissioning existing lines,⁸
 - o equipment to facilitate new connections to existing substations that is to be situated within the fence line of existing substations,
 - o upgrades to terminal equipment within existing substations to increase the rating of existing lines, and
 - o segments of lines that are proposed to be built in order to loop existing lines into and out of new substations.
- Line segments connecting new substations and nearby existing substations are characterized as new facilities, unless the connection utilizes an existing line (*e.g.*, re-terminating or looping into a new substation).

⁸ In the case of decommissioning an existing line, the work required to remove the existing line and associated equipment is considered a Public Policy Transmission Upgrade.

Appendix G: Scenarios

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



Appendix G: Scenarios

Description of Scenarios

For the purpose of the Long Island PPTN, the NYISO established three scenarios to evaluate the proposed solutions:

Baseline Scenario:

- 9,000 MW total of offshore wind generation – 6,000 MW in New York City and 3,000 MW in Long Island.
- Planned generation changes, such as known retirements and moderate buildout of upstate renewables and expected generation retirements consistent with *2021-2040 System & Resource Outlook* Contract Case and *2022 Reliability Needs Assessment* Base Case.
- Assumes generic transmission upgrades on the Barrett – Valley Stream 138 kV paths to fully alleviate congestion.

Policy Scenario:

- 12,000 MW total of offshore wind generation (6,000 MW in New York City and 6,000 MW in Long Island).
- Assumes upstate renewable buildout and fossil generation retirements and to meet CLCPA policy mandates consistent with *2021-2040 System & Resource Outlook* Policy Scenario 2 Case and *2022 Reliability Needs Assessment* 70x30 Case.
- Assumes generic transmission upgrades on the Barrett – Valley Stream 138 kV paths to fully alleviate congestion.
- CHPE and CPNY Tier 4 projects modeled in-service.

Policy + Barrett – Valley Stream Constraint Scenario (Policy + B-VS Scenario):

- Policy Scenario without the assumed generic transmission upgrades on the Barrett – Valley Stream 138 kV paths. In the first quarter of 2023, Empire Wind 2 accepted its cost allocation for System Upgrade Facilities but rejected its cost allocation for System Deliverability Upgrades in the Additional SDU Study for Class Year 2021. The System Upgrade Facilities were limited to providing the requested level of Energy Resource Interconnection Service for Empire Wind 2 and did not resolve the existing nearby transmission constraints on the Barrett – Valley Stream 138 kV paths.

In the above scenarios, modeling of offshore wind generators includes generators that currently have a NYSERDA or LIPA award, as well as reasonable assumptions for the remaining amount to achieve the 9,000 MW or 12,000 MW targets.

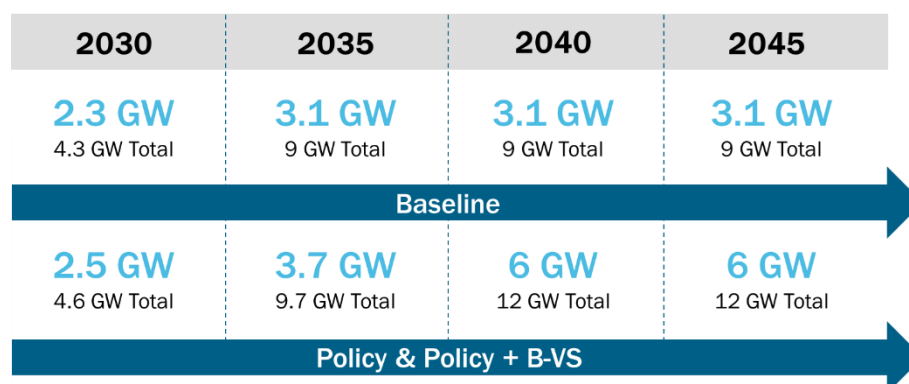
- 3,000 MW in Zone K was achieved by modeling the awarded 139 MW at East Hampton 69 kV,

880 MW at Holbrook 138 kV, 1,260 MW at Barrett 138 kV; and non-awarded 800 MW at Ruland Rd 138 kV.

- 6,000 MW in Zone K was achieved by modeling the awarded 139 MW at East Hampton 69 kV, 1,050 MW at Holbrook 138 kV, 1,350 MW at Barrett 138 kV; and non-awarded 1,150 MW at each of Ruland Rd 138 kV, East Garden City 345 kV, and Northport 138 kV.
- 6,000 MW in Zone J was achieved by modeling the awarded 816 MW at Gowanus 345 kV and 1,230 MW at Astoria 138 kV; and non-awarded 1,310 MW each at Farragut East 345 kV, Farragut West 345 kV, and West 49th St. 345 kV.

The timeline for offshore wind development in the production cost and capacity expansion models is described in Figure 1 below.

Figure 1: Long Island Offshore Wind Addition Timelines



The evaluation of the proposed solutions utilized tools, such as power flow, resource adequacy, production cost simulations, and capacity expansion.

Detailed Description of Models & Tools

Power Flow

Power flow analysis was used in evaluating metrics, such as transfer limit, expandability, and operability. The NYISO used the Baseline Scenario for the Viability & Sufficiency Assessment, as well as in the evaluation of the projects' impacts to system strength. The NYISO used the Policy and Policy + B-VS Scenarios in evaluating the projects' satisfaction of the transfer limit, expandability, and operability metrics. The Class Year 2021 Annual Transmission Baseline Assessment summer peak and spring light load cases were the starting point for power flow analyses and were updated with the following generation and tie line assumptions.

Figure 2: Power Flow Assumptions

	Viability & Sufficiency		Expandability		Transfer & Operability	Grid Strength
	Summer Peak	Light Load	Summer Peak	Light Load	Summer Peak	Light Load
Zone K OSW (MW)	3,000	3,000	6,000	6,000	6,000	3,000
Zone J OSW (MW)	6,000	6,000	6,000	6,000	0	0
Zone K Load (MW net)	4,423 (including 499 MW BTM solar)	1,107 (including 1,108 MW BTM solar)	4,423 (including 499 MW BTM solar)	1,107 (including 1,108 MW BTM solar)	4740	1,055 (including 1182 MW BTM Solar)
Zone K Conventional Generation Dispatch (Pgen MW)	~2,000	~500	~200	~200	~3100	~500
Zone K Conventional Reserve (Pmax - Pgen MW of committed units)	~900	~400	~1200	~1050	~1100	~400
LIPA Imports (MW into Long Island)	NNC = 0 CSC = 0 Neptune = 660 901/903 = -300	NNC = 0 CSC = 0 Neptune = 0 901/903 = -300	NNC = 0 CSC = 0 Neptune = 660 901/903 = -300	NNC = 0 CSC = 0 Neptune = 0 901/903 = -300	NNC = 0 CSC = 0 Neptune = 660 901/903 = -300	NNC = 0 CSC = 0 Neptune = 0 901/903 = -300

Additional details on the modeling assumptions and corresponding assessment are further described in the following appendices: Transfer & Operability in Appendix I, Expandability in Appendix J, and System Strength in Appendix K.

Resource Adequacy Models

The resource adequacy model used for the Long Island PPTN evaluation utilizes the MARS (Multi-Area Reliability Simulations) model from the *2022 Reliability Needs Assessment* (RNA) as the starting point to assess the proposed transmission projects. To establish a reference point for post-project NYCA LOLE impact comparison, the NYISO developed two pre-project models to represent the Baseline and Policy Scenarios for this analysis. Both models leveraged the MARS models developed under the *2022 Reliability Need Assessment* study process for study year 2030.

The following key changes were applied to the Long Island PPTN pre-project cases compared to the RNA's cases:

- The RNA Base Case for study year 2030 was further updated to reflect offshore wind targets and also to remove the proposed Champlain Hudson Power Express HVDC transmission project; and
- The RNA Policy Case Scenario 2 was further updated to reflect offshore wind targets. Both Champlain Hudson Power Express and the proposed Clean Path New York HVDC transmission projects continue to be modeled in this case.

These two models were further updated to reflect the impacts that each project would have on the

affected MARS topology transfer limits. Additional details on the model assumptions and corresponding capacity benefit assessment are further described in Appendix M.

Production Cost Simulations

The production cost model used for the Long Island PPTN evaluation utilizes the MAPS (Multi-Area Production Simulation) model from the *2021-2040 System & Resource Outlook* (Outlook) as the starting point for the three scenarios (Baseline, Policy, and Policy + B-VS). The Outlook study period is from 2021-2040, whereas the Long Island PPTN study period is from 2030-2050. The NYISO simulated discrete years at 5-year intervals to provide a reasonable representation of the twenty-year study period without simulating each year of production cost data.

Production cost savings for a project are calculated as the difference between the pre-project and post-project results over the duration of a project's study period, starting at the estimated in-service date and extending 20 years. The following key changes were applied to the Long Island PPTN pre-project cases compared to the Outlook's cases:

- Extended load forecast, fuel price forecast, and emission price forecast to 2045 to be modeled in production cost simulations. 2045 is considered as the proxy year to represent system conditions from 2045-2050; and
- Increased offshore wind capacity and points of interconnection for offshore wind generators in the three scenarios for the Long Island PPTN compared to the Outlook case assumptions.

Additional details on the production cost simulations are further described in Appendix L.

Capacity Expansion Simulations

The NYISO leveraged the capacity expansion model for Policy Case Scenario 2 from the Outlook in the Long Island PPTN evaluation. For purposes of the evaluation, the NYISO modified the capacity expansion model for Policy Case Scenario 2 to align the offshore wind generation buildout consistent with production cost simulations in this evaluation and modeled transmission upgrades accordingly for each proposed transmission project. This assessment was conducted for both the Policy and Policy + B-VS Scenarios for the top-tier projects for model years 2021-2040.

The following key changes were applied to the Long Island PPTN project cases compared to the Outlook's Policy Case Scenario 2:

- Increased offshore wind production due to reduced curtailment associated with each transmission project, as identified in the production cost simulations;
- Modeled changes in interzonal transfer limits for associated with each transmission project;

and

- Decreased the Zone K capacity reserve margin accordingly for each project based assumed increases in transmission security limits pursuant to the methodology described in Appendix N.

Additional details on the capacity expansion model and corresponding avoided cost assessment are further described in Appendix N.

Appendix H: Additional Information

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

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Appendix H: Additional Information

The New York Public Service Commission (PSC) March 2021 Order Addressing Public Policy Requirements for Transmission Planning Purposes provided, *“The NYISO shall also consider other metrics in its evaluation of this Public Policy Requirement, including: changes in production costs; Load-Based Marginal Prices; transmission losses; emissions; Installed Capacity costs; Transmission Congestion Contract revenues; transmission congestion; impacts on transfer limits; and, resource deliverability.”* This appendix provides, for each of the metrics identified in the PSC Order, either a data figure or reference to other appendices where the supporting information can be found.

Production Cost Changes

Appendix L, Figure 3 contains the production cost savings for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Load-Based Marginal Prices

The figure below shows the estimated NYISO Location Based Marginal Prices (LBMPs) for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Case	NYISO Annual Average LBMP (\$/MWh)											
	Baseline				Policy				Policy + B-VS			
	2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Pre-Project	39	43	54	68	37	39	55	78	37	40	56	79
T035 - LS Power	39	43	55	69	37	39	54	76	37	39	54	76
T036 - NextEra Core 1	39	43	55	69	37	39	54	77	37	40	55	78
T037 - NextEra Core 2	39	43	55	69	37	39	54	77	37	40	55	78
T038 - NextEra Core 3	39	43	55	69	37	39	54	76	37	40	55	78
T039 - NextEra Core 4	39	43	55	69	37	39	54	77	37	40	55	78
T040 - NextEra Core 5	39	43	55	69	37	39	54	77	37	40	55	78
T041 - NextEra Core 6	39	43	55	69	37	39	54	77	37	40	55	78
T042 - NextEra Core 7	39	43	55	69	37	39	54	77	37	40	55	78
T043 - NextEra Enh 1	39	43	55	69	38	39	54	76	38	40	54	77
T044 - NextEra Enh 2	40	43	55	69	38	39	54	76	38	40	55	76
T047 - Propel Base 1	39	43	55	69	37	39	54	77	38	40	55	78
T048 - Propel Base 2	39	43	55	69	37	39	54	77	37	40	55	78
T049 - Propel Base 3	39	43	55	69	37	39	54	77	37	39	54	77
T051 - Propel Alt 5	39	43	55	69	37	39	54	76	37	40	55	77
T052 - Propel Alt 6	39	43	55	69	37	39	54	76	37	39	54	77
T053 - Propel Alt 7	39	43	55	69	37	39	54	76	37	39	54	77

Transmission Losses

The figure below shows the total NYCA transmission losses for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Case	Transmission Losses (GWh)											
	Baseline				Policy				Policy + B-VS			
	2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Pre-Project	3,423	3,797	4,265	5,095	3,863	5,646	7,937	9,210	3,864	5,648	7,934	9,205
T035 - LS Power	3,423	3,792	4,264	5,089	3,862	5,662	7,924	9,217	3,863	5,662	7,921	9,217
T036 - NextEra Core 1	3,398	3,760	4,229	5,046	3,835	5,608	7,847	9,140	3,842	5,610	7,854	9,134
T037 - NextEra Core 2	3,402	3,766	4,236	5,054	3,828	5,607	7,853	9,141	3,837	5,607	7,858	9,132
T038 - NextEra Core 3	3,398	3,770	4,236	5,053	3,830	5,602	7,851	9,135	3,837	5,606	7,850	9,127
T039 - NextEra Core 4	3,380	3,746	4,211	5,023	3,807	5,567	7,800	9,081	3,814	5,572	7,806	9,071
T040 - NextEra Core 5	3,401	3,769	4,238	5,055	3,831	5,604	7,848	9,134	3,839	5,607	7,850	9,130
T041 - NextEra Core 6	3,396	3,758	4,227	5,045	3,834	5,606	7,850	9,140	3,844	5,610	7,851	9,132
T042 - NextEra Core 7	3,396	3,758	4,227	5,045	3,834	5,606	7,850	9,140	3,844	5,610	7,851	9,132
T043 - NextEra Enh 1	3,389	3,749	4,217	5,030	3,793	5,563	7,789	9,064	3,797	5,562	7,792	9,058
T044 - NextEra Enh 2	3,412	3,774	4,242	5,064	3,831	5,604	7,853	9,130	3,835	5,605	7,852	9,130
T047 - Propel Base 1	3,507	3,880	4,359	5,191	3,867	5,684	7,958	9,268	3,872	5,685	7,955	9,261
T048 - Propel Base 2	3,420	3,787	4,259	5,082	3,844	5,630	7,884	9,174	3,841	5,631	7,881	9,169
T049 - Propel Base 3	3,425	3,794	4,268	5,097	3,863	5,678	7,945	9,259	3,862	5,677	7,945	9,252
T051 - Propel Alt 5	3,426	3,797	4,267	5,094	3,857	5,651	7,908	9,199	3,855	5,652	7,908	9,193
T052 - Propel Alt 6	3,436	3,805	4,277	5,102	3,869	5,661	7,923	9,219	3,869	5,664	7,921	9,216
T053 - Propel Alt 7	3,415	3,786	4,254	5,074	3,847	5,632	7,879	9,170	3,847	5,632	7,875	9,163

Emissions

Appendix L, Figures 11-13 contain the estimates for CO₂ emissions; Figures 20-22 contain the estimates for SO₂ emissions; and Figures 23-25 contain the estimates for NO_x emissions.

Installed Capacity Costs

Appendix N, Figure 18 contains the total capital cost reduction for a selected set of proposed projects for the Policy and Policy + Barrett-Valley Stream Scenarios.

Transmission Congestion Contract Revenues

The figure below shows the total NYCA transmission congestion rent, representing the total potential transmission congestion contract revenue, for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Case	Transmission Congestion Rent (\$M)											
	Baseline				Policy				Policy + B-VS			
	2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Pre-Project	443	669	633	693	729	3,527	6,973	8,801	864	3,630	7,157	9,018
T035 - LS Power	407	579	527	600	650	3,357	6,517	8,125	650	3,364	6,555	8,171
T036 - NextEra Core 1	422	589	554	621	683	3,389	6,743	8,550	871	3,591	6,935	8,835
T037 - NextEra Core 2	405	550	515	588	649	3,299	6,540	8,183	838	3,502	6,731	8,472
T038 - NextEra Core 3	402	547	509	566	646	3,317	6,368	7,927	852	3,508	6,564	8,225
T039 - NextEra Core 4	484	602	608	701	655	3,397	6,732	8,614	855	3,581	6,926	8,925
T040 - NextEra Core 5	402	563	513	558	670	3,359	6,442	8,038	866	3,549	6,658	8,326
T041 - NextEra Core 6	421	589	544	598	681	3,407	6,575	8,325	880	3,615	6,766	8,598
T042 - NextEra Core 7	421	589	544	598	681	3,407	6,575	8,325	880	3,615	6,766	8,598
T043 - NextEra Enh 1	447	561	545	628	582	3,285	6,382	7,986	792	3,486	6,591	8,212
T044 - NextEra Enh 2	447	563	546	634	575	3,280	6,390	8,007	771	3,467	6,612	8,007
T047 - Propel Base 1	408	578	528	600	667	3,357	6,542	8,185	884	3,565	6,896	8,700
T048 - Propel Base 2	407	577	530	597	673	3,355	6,717	8,407	903	3,593	7,025	8,916
T049 - Propel Base 3	404	570	524	590	665	3,352	6,543	8,148	715	3,394	6,689	8,399
T051 - Propel Alt 5	407	576	528	598	665	3,359	6,478	8,098	879	3,549	6,830	8,613
T052 - Propel Alt 6	406	576	527	593	666	3,338	6,477	8,084	874	3,535	6,699	8,375
T053 - Propel Alt 7	406	574	522	575	669	3,348	6,475	8,083	889	3,537	6,720	8,420

Transmission Congestion

The figure below shows the total NYCA demand congestion cost for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Case	Demand Congestion (\$M)											
	Baseline				Policy				Policy + B-VS			
	2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Pre-Project	186	286	302	374	301	3,562	10,795	14,449	316	3,751	11,079	14,781
T035 - LS Power	206	286	298	433	324	3,630	10,772	14,399	322	3,636	10,833	14,463
T036 - NextEra Core 1	222	325	349	440	265	3,618	11,033	14,890	295	3,655	11,167	15,004
T037 - NextEra Core 2	204	318	325	421	267	3,516	10,776	14,444	325	3,568	10,904	14,589
T038 - NextEra Core 3	203	315	310	392	265	3,546	10,766	14,389	324	3,593	10,882	14,550
T039 - NextEra Core 4	327	342	442	574	271	3,608	11,100	15,082	330	3,644	11,260	15,293
T040 - NextEra Core 5	202	300	300	376	294	3,593	10,819	14,490	334	3,630	10,980	14,658
T041 - NextEra Core 6	222	327	330	410	269	3,669	10,974	14,805	297	3,721	11,087	14,946
T042 - NextEra Core 7	222	327	330	410	269	3,669	10,974	14,805	297	3,721	11,087	14,946
T043 - NextEra Enh 1	271	290	351	467	296	3,513	10,712	14,399	287	3,558	10,837	14,457
T044 - NextEra Enh 2	266	270	340	481	282	3,495	10,632	14,273	264	3,553	10,782	14,273
T047 - Propel Base 1	207	283	304	434	302	3,621	10,859	14,603	309	3,653	10,994	14,801
T048 - Propel Base 2	204	282	301	431	308	3,612	10,840	14,571	311	3,698	11,132	15,018
T049 - Propel Base 3	198	271	303	425	302	3,600	10,857	14,572	300	3,610	10,856	14,632
T051 - Propel Alt 5	207	282	301	424	313	3,643	10,867	14,582	312	3,649	10,988	14,761
T052 - Propel Alt 6	201	286	303	423	305	3,583	10,856	14,559	316	3,611	10,930	14,645
T053 - Propel Alt 7	202	285	295	400	303	3,588	10,836	14,505	314	3,607	10,936	14,604

Impacts on Transfer Limits

Appendix I, Figures 2-5 contain the N-1 transfer limit calculation results for each of the Policy and Policy + Barrett-Valley Stream Scenarios.

Resource Deliverability

Appendix L, Figures 7-9 contain the energy deliverability metric results for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

A vertical image on the left side of the page showing a close-up of a white offshore wind turbine. The turbine has three blades and is mounted on a dark, cylindrical foundation. The background is a deep blue with faint, light blue circuit-like patterns. The water at the bottom is a darker blue with whitecaps.

Appendix I: Transfer Limit Analysis

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023

Appendix I: Transfer Analysis

Transfer Limit Methodology

Transfer limit analysis calculated transfer limits with and without each project to determine the incremental impact on the amount of power that can be transferred across the LIPA Import and LIPA Export interfaces, while observing applicable reliability criteria. These transfer limits are “optimal transfers” where all generators may be dispatched anywhere between their maximum and minimum power output. These generators are dispatched independently (not proportionally) to facilitate transfers. The goal of this analysis is to mimic, to the extent possible, the energy market management system in the NYISO Control Center; however, it does not include generator bid information and instead assumes that all generators have identical bids.

Transfer limit analysis was performed under the following assumptions:

- 1) The transfer limits were evaluated using the generation summarized in Figure 1;
- 2) All NYISO Bulk Power Transmission Facilities (BPTF) lines, all 115 kV and above lines in Zones F–J, and all 138 kV and above line in Zone K were secured;
- 3) In accordance with NPCC criteria and NYSRC reliability rules, the contingency list was modified to include the project’s related contingencies;
- 4) Phase angle regulators were allowed to be at the optimized setpoints in pre-contingency conditions to facilitate transfers and their angle was fixed post-contingency;
- 5) Internal HVDC facilities were allowed to be optimally scheduled in pre-contingency conditions and this schedule was fixed post-contingency; and
- 6) The flows on all monitored lines are secured to their normal rating in pre-contingency conditions and the applicable emergency rating in post-contingency conditions.

Transfer limit analysis was based on the CY21 Annual Transmission Baseline Assessment transfer case with assumptions of Long Island offshore wind (OSW) consistent with the Policy Scenario.

Figure 1: Transfer Source and Sink Definitions

Interface	Source Zone (s)	Sink Zone (s)
LI-Export	K	ON – J
LI-Import	ON – J	K

Transfer Limit Results: Normal Transfer Limit Results

The normal all-lines-in-service transfer limits (N-1) of the LI Import and LI Export interfaces are presented in

Figure 2 respectively, for the pre-project system and for the system with each project.

Figure 2: Policy Scenario: Long Island Import N-1 Normal Transfer Limits (MW)

Project	Limiting Facility	Limiting Contingency	LI Import	Delta MW
Pre-Project	Dunwoodie - Shore Road 345 kV	Sprain Brook 345 kV stuck breaker	1,665	--
T035 - LS Power	Bagatelle - Bethpage 138 kV	Ruland Road 138 kV P5 contingency	3,220	+1,555
T036 - NextEra Core 1	Locust Grove - New Bridge 138 kV	Northport 138 kV P5 contingency	3,405	+1,740
T037 - NextEra Core 2	Locust Grove - New Bridge 138 kV	Northport 138 kV P5 contingency	3,410	+1,745
T038 - NextEra Core 3	Hauppauge - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,440	+1,775
T039 - NextEra Core 4	Hauppauge - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,415	+1,750
T040 - NextEra Core5	Hauppauge - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,420	+1,755
T041 - NextEra Core 6	Hauppauge - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,460	+1,795
T042 - NextEra Core 7	Hauppauge - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,460	+1,795
T043 - NextEra Enh 1	Holbrook - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,755	+2,090
T044 - NextEra Enh 2	Holbrook - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,735	+2,070
T047 - Propel Base 1	Sprain Brook - New Shore Road 345 kV	Base Case	3,140	+1,475
T048 - Propel Base 2	Ruland Road 345 kV PAR	Base Case	3,175	+1,510
T049 - Propel Base 3	Sprain Brook - New Shore Road 345 kV	Base Case	3,140	+1,475
T051 - Propel Alt 5	Hauppauge - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,475	+1,810
T052 - Propel Alt 6	Hauppauge - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,460	+1,795
T053 - Propel Alt 7	Hauppauge - Pilgrim 138 kV	Holbrook 138 kV tower contingency	3,425	+1,760

Figure 3: Policy Scenario: Long Island Export N-1 Normal Transfer Limits (MW)

Project	Limiting Facility	Limiting Contingency	LI Export Limit	Delta
Pre-Project	Carle Place-East Garden City 138 kV	Valley Stream 138 kV P5 contingency	375	--
T035 - LS Power	Northport-Pilgrim 138 kV	Pilgrim 138 kV stuck breaker	3,550	+3,175
T036 - NextEra Core 1	Ruland Road - Sprain Brook 345 kV	Base Case	3,265	+2,890
T037 - NextEra Core 2	Bethpage - Ruland Road 138 kV	Ruland Road - Pilgrim 138 kV tower contingency	3,685	+3,310
T038 - NextEra Core 3	Holbrook - Ronkonkoma 138 kV	Holbrook 138 kV tower contingency	3,925	+3,550
T039 - NextEra Core 4	Dunwoodie 345 kV - Northport 345 kV	Ruland Road - Sprain Brook 345 kV	3,385	+3,010
T040 - NextEra Core5	Northport 138 kV - Northport 345 kV	Ruland Road - Sprain Brook 345 kV	3,405	+3,030
T041 - NextEra Core 6	Jamaica - Valley Stream 138 kV	Dunwoodie GIS 345 kV stuck breaker	3,670	+3,295
T042 - NextEra Core 7	Jamaica - Valley Stream 138 kV	Dunwoodie GIS 345 kV stuck breaker	3,660	+3,285
T043 - NextEra Enh 1	Elwood - Northport 138 kV circuit 2	Elwood - Northport 138 kV circuit 1	4,305	+3,930
T044 - NextEra Enh 2	Elwood - Northport 138 kV circuit 2	Elwood - Northport 138 kV circuit 1	4,275	+3,900
T047 - Propel Base 1	Carle Place - East Garden City 138 kV	Shore Rd 138 kV stuck breaker	2,130	+1,755
T048 - Propel Base 2	Roselyn - East Garden City 138 kV	Shore Rd 138 kV stuck breaker	2,040	+1,665
T049 - Propel Base 3	Carle Place - East Garden City 138 kV	Shore Rd 138 kV stuck breaker	2,145	+1,770
T051 - Propel Alt 5	Carle Place - East Garden City 138 kV	Shore Rd 138 kV stuck breaker	2,640	+2,265
T052 - Propel Alt 6	Shore Road - Dunwoodie 345 kV	Base Case	3,860	+3,485
T053 - Propel Alt 7	Carle Place - East Garden City 138 kV	East Garden City 138 kV stuck breaker	2,915	+2,540

The Normal Transfer limits for the Barrett-Valley Stream Scenario (i.e., Barrett-Valley Stream paths are secured) are shown in Figures 4 and 5.

Figure 4: Barrett-Valley Stream Scenario: Long Island Import N-1 Normal Transfer Limits (MW)

Project	Limiting Facility	Limiting Contingency	LI Import Limit	Delta
Pre-Project	Dunwoodie – Shore Rd 345 kV	Sprain Brook stuck breaker	1,665	--
T035 – LS Power	Barrett-Valley Steam 138 kV	Ruland Rd P5 contingency	2,720	+1,055
T036 – NextEra Core 1	Locust Grove – Newbridge 138 kV	Northport P5 contingency	3,400	+1,735
T040 – NextEra Core 5	Hauppauge – Pilgrim 138 kV	Holbrook – Ruland Rd 138 kV tower contingency	3,420	+1,755
T048 – Propel Base 2	Barrett-Valley Steam 138 kV	Barrett stuck breaker	2,910	+1,245
T049 – Propel Base 3	New Shore Rd – Sprain Brook 345 kV	Base Case	3,140	+1,475
T051 – Propel Alt 5	Hauppauge – Pilgrim 138 kV	Holbrook-Ruland Rd 138 kV tower contingency	3,465	+1,800
T052 – Propel Alt 6	Hauppauge – Pilgrim 138 kV	Holbrook – Ruland Rd 138 kV tower contingency	3,460	+1,795

Figure 5: Barrett-Valley Stream Scenario: Long Island Export N-1 Normal Transfer Limits (MW)

Project	Limiting Facility	Limiting Contingency	LI Export Limit	Delta
Pre-Project	Carle Place – East Garden City 138 kV	Valley Stream P5 contingency	320	--
T035 – LS Power	Valley Stream – East Garden City 138 kV	Ruland Rd P5 contingency	3,350	+3,030
T036 – NextEra Core 1	Sprain Brook – Ruland 345 kV	Base Case	3,055	+2,735
T040 – NextEra Core 5	Northport 138/345 kV	Ruland – Sprain Brook 345 kV	3,095	+2,775
T048 – Propel Base 2	Valley Stream – East Garden City 138 kV	Shore Rd P5 contingency	1,795	+1,475
T049 – Propel Base 3	Carle Place – East Garden City 138 kV	Shore Rd stuck breaker	2,145	+1,825
T051 – Propel Alt 5	Carle Place – East Garden City 138 kV	Shore Rd stuck breaker	2,625	+2,305
T052 – Propel Alt 6	Eastern Queens – Dunwoodie 345 kV	Base Case	3,850	+3,530

Transfer Limit Results: Flexibility Under Outage Conditions

This analysis focused on transfer limits under the worst one single element and two single element maintenance conditions in order to evaluate the flexibility of each project given normal operations when all lines are not in service. When reviewing these transfer limits, larger import and export limits are preferable. Adding the import and export limits gives another useful indication of the operating range under outage conditions, which would give NYISO more operational flexibility.

The outage import and export transfer limits for the Policy Scenario are shown in Figures 6 and 7, respectively, and the range is shown in Figure 8. The same analysis was run for the top-tier projects on the Barrett-Valley Stream Scenario. Figures 9 and 10 show the import and export transfer limits, respectively, for the Barrett-Valley Stream Scenario and the range is shown in Figure 11.

Figure 6: Policy Scenario: Long Island Import Transfer Limit Under Single and Double Maintenance Conditions (MW)

Project	Import (MW)				
	All Lines In	Worst 1st Contingency (N1)		Worst 1st Contingency (N2)	
Pre-Project	1,665	NEPTUNE	1,005	SPRNBK - EGC 345 Y49_NEPTUNE	390
T035 - LSPower	3,220	138-563	2,740	138-563_NNC-3C	2,540
T036 - NextEra Core1	3,405	NEET_RUL-SBR_345	3,055	NEET_EGC-DUN_345_NEET_RUL-SBR_345	2,400
T037 - NextEra Core 2	3,410	NEET_RUL-SBR_345	3,035	NEWBRGE 345/138 Bank #1_NEET_RUL-SBR_345	2,535
T038 - NextEra Core 3	3,440	138-882	3,330	138-882_PILGRIM 138/69 Bank #4	3,035
T039 - NextEra Core 4	3,415	138-679	3,155	138-367_138-679	3,060
T040 - NextEra Core 5	3,420	138-679	3,105	138-367_138-679	3,035
T041 - NextEra Core 6	3,460	138-882	3,355	138-882_PILGRIM 138/69 Bank #4	3,000
T042 - NextEra Core 7	3,460	138-882	3,350	138-882_PILGRIM 138/69 Bank #4	3,005
T043 - NextEra Enh 1	3,755	138-871	3,450	138-871_69-670	3,280
T044 - NextEra Enh 2	3,735	138-871	3,430	138-871_69-670	3,275
T047 - Propel Base 1	3,140	SHR-SPRBK LINK	2,310	EGC-TREMONT LINK_SHR-SPRBK LINK	1,635
T048 - Propel Base 2	3,175	Y51-Barrett-Tremont345	2,455	Y51-Barrett-Tremont345_Y53-Ruland-SPRAINBROOK	1,660
T049 - Propel Base 3	3,140	SHR-SPRBK LINK	2,325	EGC-TREMONT LINK_SHR-SPRBK LINK	1,610
T051 - Propel Alt 5	3,475	EGC-TREMONT LINK	3,145	Y49_EGC-TREMONT LINK	2,320
T052 - Propel Alt 6	3,460	NEW SYO-SHR	3,255	138-563_NEW SYO-SHR	2,815
T053 - Propel Alt 7	3,425	138-882	3,340	138-882_69-670	3,150

Figure 7: Policy Scenario: Long Island Export Transfer Limit Under Single and Double Maintenance Conditions (MW)

Project	Export (MW)				
	All Lines In	Worst 1st Contingency (N1)		Worst 1st Contingency (N2)	
Pre-Project	375	SPRNBK - EGC 345 Y49	-415	SPRNBK - EGC 345 Y49_138-362	-650
T035 - LSPower	3,550	NTHGATE - STHGATE HVDC 1/2/3	2,565	NTHGATE - STHGATE HVDC 2_NTHGATE - STHGATE HVDC 3	1,355
T036 - NextEra Core 1	3,265	NEET_EGC-DUN_345	2,440	NEET_EGC-SBR_345_NEET_EGC-DUN_345	1,540
T037 - NextEra Core 2	3,685	SPRNBK - EGC 345 Y49	2,540	SPRNBK - EGC 345 Y49_NEET_RUL-SBR_345	1,725
T038 - NextEra Core 3	3,925	SPRNBK - EGC 345 Y49	2,775	SPRNBK - EGC 345 Y49_NEET_NPT_TB1	2,385
T039 - NextEra Core 4	3,385	NEET_DUN-NPT_345	2,395	NEET_EGC-SBR_345_NEET_DUN-NPT_345	1,510
T040 - NextEra Core 5	3,405	NEET_DUN-NPT_345	2,425	NEET_EGC-SBR_345_NEET_DUN-NPT_345	1,530
T041 - NextEra Core 6	3,670	NEET_NPT-SPR_HVDC	2,510	NEET_EGC-DUN_345_NEET_NPT-SPR_HVDC	1,530
T042 - NextEra Core 7	3,660	NEET_NPT-SPR_HVDC	2,500	NEET_EGC-DUN_345_NEET_NPT-SPR_HVDC	1,535
T043 - NextEra Enh 1	4,305	SPRNBK - EGC 345 Y49	3,160	SPRNBK - EGC 345 Y49_NEET_NPT-SPR_HVDC	2,510
T044 - NextEra Enh 2	4,275	SPRNBK - EGC 345 Y49	3,130	SPRNBK - EGC 345 Y49_NEET_NPT-SPR_HVDC	2,465
T047 - Propel Base 1	2,130	SHR-SPRBK LINK	1,300	Y49_SHR-SPRBK LINK	625
T048 - Propel Base 2	2,040	SPRNBK - EGC 345 Y49	1,270	SPRNBK - EGC 345 Y49_Y53-Ruland-SPRAINBROOK	510
T049 - Propel Base 3	2,145	SHR-SPRBK LINK	1,310	Y49_SHR-SPRBK LINK	660
T051 - Propel Alt 5	2,640	EGC-TREMONT LINK	1,930	Y49_EGC-TREMONT LINK	1,190
T052 - Propel Alt 6	3,860	SHR-SPRBK LINK2	3,135	Y49_SHR-SPRBK LINK2	2,400
T053 - Propel Alt 7	2,915	NORTHPORT-SPRAINBROOK-HVDC	1,725	Y49_NORTHPORT-SPRAINBROOK-HVDC	905

Figure 8: Policy Scenario: Operability Ranges Under Maintenance Conditions (MW)

Project	No Outages	One Outage	Two Outages
Pre-Project	2,040	590	0
T035 - LSPower	6,770	5,305	3,895
T036 - NextEra Core 1	6,670	5,495	3,940
T037 - NextEra Core 2	7,095	5,575	4,260
T038 - NextEra Core 3	7,365	6,105	5,420
T039 - NextEra Core 4	6,800	5,550	4,570
T040 - NextEra Core 5	6,825	5,530	4,565
T041 - NextEra Core 6	7,130	5,865	4,530
T042 - NextEra Core 7	7,120	5,850	4,540
T043 - NextEra Enh 1	8,060	6,610	5,790
T044 - NextEra Enh 2	8,010	6,560	5,740
T047 - Propel Base 1	5,270	3,610	2,260
T048 - Propel Base 2	5,215	3,725	2,170
T049 - Propel Base 3	5,285	3,635	2,270
T051 - Propel Alt 5	6,115	5,075	3,510
T052 - Propel Alt 6	7,320	6,390	5,215
T053 - Propel Alt 7	6,340	5,065	4,055

Figure 9: Policy Scenario: Operability Ranges Visualized Under Maintenance Conditions

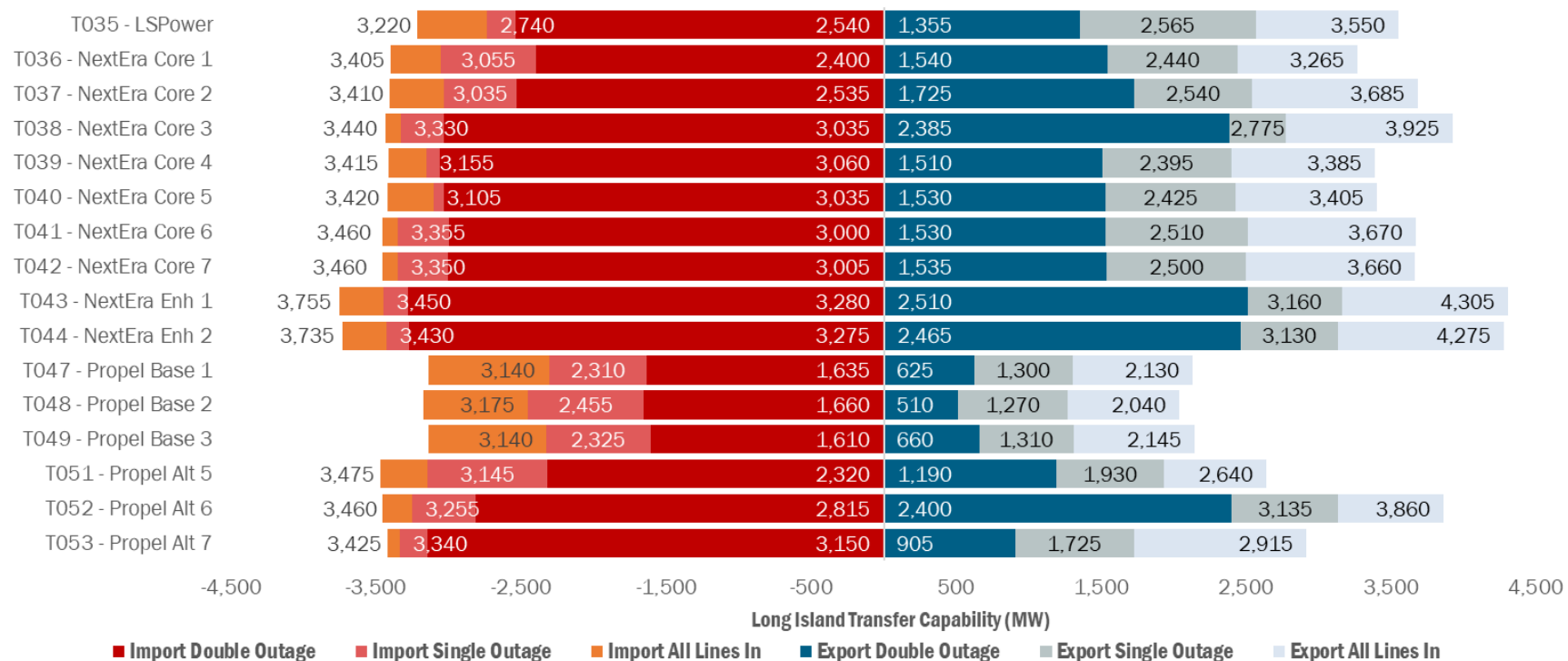


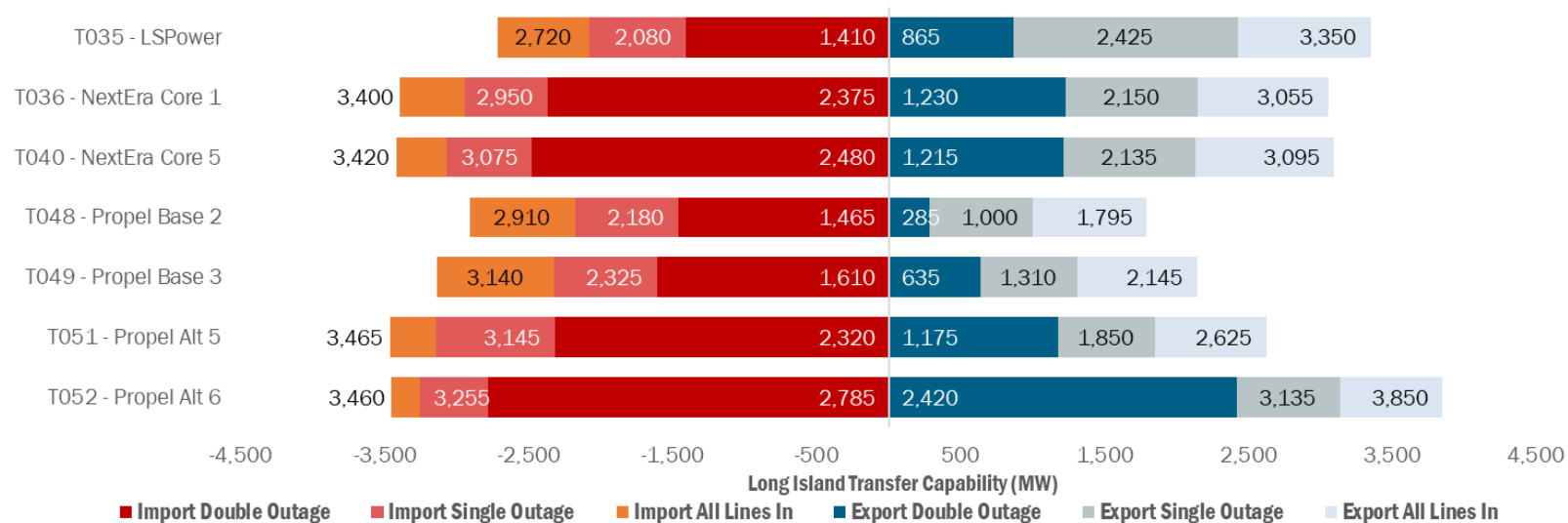
Figure 10: Policy + Barrett-VS Scenario: Long Island Import Transfer Limit Under Single and Double Maintenance Conditions (MW)

Project	Import Limits (MW)		
	No Outages	One Outage	Two Outages
T035 - LSPower	2,720	2,080	1,410
T036 - NextEra Core 1	3,400	2,950	2,375
T040 - NextEra Core 5	3,420	3,075	2,480
T048 - Propel Base 2	2,910	2,180	1,465
T049 - Propel Base 3	3,140	2,325	1,610
T051 - Propel Alt 5	3,465	3,145	2,320
T052 - Propel Alt 6	3,460	3,255	2,785

Figure 11: Policy + Barrett-VS Scenario: Long Island Export Transfer Limit Under Single and Double Maintenance Conditions (MW)

Project	Export Limits (MW)		
	No Outages	One Outage	Two Outages
T035 - LSPower	3,350	2,425	865
T036 - NextEra Core 1	3,055	2,150	1,230
T040 - NextEra Core 5	3,095	2,135	1,215
T048 - Propel Base 2	1,795	1,000	285
T049 - Propel Base 3	2,145	1,310	635
T051 - Propel Alt 5	2,625	1,850	1,175
T052 - Propel Alt 6	3,850	3,135	2,420

Figure 12: Policy + Barrett-VS Scenario: Operability Ranges Visualized Under Maintenance Conditions



In order to explore each project's ability to accommodate net-load variability in Long Island, the NYISO performed a sensitivity analysis to assess the impact of an increase in transmission constraint margin. For the transmission constraint margin sensitivity, the operations flexibility range methodology uses the same assumptions as the Barrett-Valley Stream Scenario except it assumes that all Long Island/NYCA tie lines evenly split a 600 MW transmission constraint margin across all 345 kV AC lines from Zone K to the rest of the NYCA. The NYISO employed this sensitivity to further evaluate and distinguish among the top-tier projects. The outage import and export transfer limits for the transmission constraint margin sensitivity are shown in Figures 13 and 14, respectively. This analysis did not account for re-allocating the transmission constraint margin to account for the outage(s).

Figure 13: Transmission Constraint Margin Sensitivity: Long Island Import Transfer Limit Under Single and Double Maintenance Conditions (MW)

Project	Import Limits (MW)		
	No Outages	One Outage	Two Outages
T035 - LS Power	2,200	1,770	1,410
T036 - NextEra Core 1	3,350	2,920	2,105
T040 - NextEra Core 5	3,410	2,910	2,095
T048 - Propel Base 2	2,530	1,900	1,315
T049 - Propel Base 3	2,775	2,015	1,415
T051 - Propel Alt 5	3,465	2,900	2,120
T052 - Propel Alt 6	3,460	3,255	2,785

Figure 14: Transmission Constraint Margin Sensitivity: Long Island Export Transfer Limit Under Single and Double Maintenance Conditions (MW)

Project	Export Limits (MW)		
	No Outages	One Outage	Two Outages
T035 - LS Power	3,050	2,135	615
T036 - NextEra Core 1	2,650	1,835	1,065
T040 - NextEra Core 5	2,815	1,825	1,050
T048 - Propel Base 2	1,570	910	275
T049 - Propel Base 3	1,910	1,115	500
T051 - Propel Alt 5	2,500	1,795	1,170
T052 - Propel Alt 6	3,655	2,950	2,240

Appendix J: Expandability

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



Appendix J: Expandability

Long Island Electrical Expandability Results

For purposes of the expandability metrics and given the New York's public policy objectives, the NYISO evaluated the electrical expandability based on the ability of each project to integrate more than the minimum 3,000 MW of offshore wind (OSW) energy injection into Long Island. The assessment performed N-0, N-1, and N-1-1 analysis for the Policy Scenario based on the assumption that up to 6,000 MW of offshore wind energy may be interconnected to Long Island. Figure 1 summarizes the maximum amount of Long Island offshore wind energy (up to 6,000 MW) that can be accommodated by each project without curtailment under N-0, N-1, and N-1-1 conditions.

Figure 1: Electrical Expandability (Base) Results

Electrical Expandability	Maximum Amount of Long Island OSW (MW)			
	Summer Peak		Spring Light Load	
	N0/N-1	N-1-1	N0/N-1	N-1-1
Base Case	4,550	4,150	2,300	2,050 ¹
T035 - LS Power	5,575	5,125	5,150	4,350
T036 - NextEra Core 1	5,825	5,175	4,525	4,450
T037 - NextEra Core 2	5,825	4,975	4,925	4,150
T038 - NextEra Core 3	6,000	4,850	5,325	4,600
T039 - NextEra Core 4	6,000	4,900	4,925	4,400
T040 - NextEra Core 5	6,000	4,900	4,925	4,375
T041 - NextEra Core 6	6,000	4,875	5,175	4,475
T042 - NextEra Core 7	6,000	4,875	5,175	4,500
T043 - NextEra Enh 1	6,000	6,000	6,000	5,400
T044 - NextEra Enh 2	6,000	6,000	5,175	4,900
T047 - Propel Base 1	5,825	5,050	4,275	3,750
T048 - Propel Base 2	5,825	4,900	4,525	3,725
T049 - Propel Base 3	5,825	5,075	4,225	3,750
T051 - Propel Alt 5	6,000	5,075	5,125	4,300
T052 - Propel Alt 6	5,825	5,025	5,650	5,075
T053 - Propel Alt 7	6,000	5,375	5,300	4,350

The electrical expandability results presented in Figure 1 are based on the following assumptions:

- 1) The results were obtained using TARA's Security Constrained Dispatch function with DC power flow solution. Internal NYCA controllable lines (with exceptions mention in #3, below) and the offshore wind generators interconnected to Long Island were adjusted to prevent overloads.

¹ The flow across the 901/903 PARs exceeded the 300 MW setpoint. The OSW output would have to be curtailed to ~1,550 MW to maintain the PAR schedule and secure all monitored branches.

- 2) Long Island internal branches and tie lines of 138 kV and above were secured to their applicable ratings (normal for pre-contingency and LTE for post-contingency).
- 3) PAR schedules controlling flow on the Norwalk-Northport cables were allowed to adjust beyond their initial setpoint of 0 MW. The PAR schedule for the 901/903 lines connecting to Jamaica were held constant at 300 MW.

Because the future offshore wind buildout is unknown at this time, the NYISO further evaluated the expandability of the top-tier projects with a scenario that assumed reasonable changes in the modeling of offshore wind generation (such as injection locations and amounts). Figure 2 below presents these results for the spring light load Policy Scenario. The Figure 2 footnotes summarize project-specific offshore wind modeling adjustments that enabled a greater amount of offshore wind injection into Long Island.

Figure 2: Electrical Expandability Results for the Top-Tier Projects Under N-1 and N-1-1 Spring Light Load Conditions

Electrical Expandability - Top Tier	Maximum Amount of Long Island OSW (MW)	
	N-0/N-1	N-1-1
T035 - LS Power	5,150	4,325
T036 - NextEra Core 1 ²	5,125	4,475
T040 - NextEra Core 5 ²	5,175	4,400
T048 - Propel Base 2	4,550	3,725
T049 - Propel Base 3	4,475	3,750
T051 - Propel Alt 5 ³	5,425	4,500
T052 - Propel Alt 6 ⁴	6,000	5,450

² The T036 – NextEra Core 1 and T040 – NextEra Core 5 were evaluated with the offshore wind generation connected at Barrett moved to the proposed Valley Stream 345 kV substation.

³ T051 - Propel Alt. 5 was evaluated with the offshore wind generation connected at Northport moved to the proposed Shore Road 345 kV substation.

⁴ T052 – Propel Alt. 6 was evaluated with the offshore wind generation connected at Northport moved to the proposed Shore Road 345 kV substation. Additionally, the East Garden City offshore wind capacity was increased beyond the initial value in the Policy Scenario.

Figure 3 below shows the most limiting first-level contingencies in the N-1-1 analysis.

Figure 3: Spring Light Load N-1-1 1st level contingency definitions

SLL N-1-1	1 st level contingency
T035 - LS Power	Jamaica – Lake Success (903 PAR)
T036 - NextEra Core 1	(NextEra) East Garden City – Sprain Brook 345kV
T040 - NextEra Core 5	(NextEra) Ruland Road – Sprain Brook 345kV
T048 - Propel Base 2	(Propel) Ruland Road – Sprain Brook (Y53)
T049 - Propel Base 3	(Propel) Shore Road – Sprain Brook 345kV
T051 - Propel Alt 5	(Propel) East Garden City – Tremont 345kV
T052 - Propel Alt 6	(Propel) East Garden City – Tremont 345kV B-VS (Propel) Barrett – East Garden City 345kV

Long Island Physical Expandability Results

Under the expandability metric, the NYISO also evaluated each project’s physical expandability. Physical expandability evaluates the number of potential Points of Interconnection (POIs) proposed by a project. The potential POIs are broken down into those that are created by a project (Proposed POIs) and those that can be reasonably created in the future based on additional modifications to the transmission facilities (Expandable POIs). Proposed POIs are where the equipment necessary to make an open POI, e.g., breaker and buswork, are included in the project equipment list and costs. Expandable POIs are those points in a substation where the developer indicated that the project has incorporated space for the necessary POI equipment, but that equipment is not included in the project equipment list and costs. The evaluation does not consider whether project substations could be expanded further to accommodate additional POIs (e.g., addition of bays or conversion to a ring bus). Furthermore, breaker positions were not counted as POIs under certain situations:

- Breaker positions that become available by retiring a line,
- Potential for an OSW generator’s HVDC lead line to connect to a project’s HVDC converter station (i.e., turn into a multi-terminal HVDC system)
- Back-to-back breakers that were proposed to eliminate the potential for a stuck breaker contingency, and
- Equipment spacing concerns based on a preliminary review.

Figure 4 shows the Proposed POIs, and Figure 5 shows the Expandable POIs for each project at different substations.

Figure 4: Proposed POIs by Zone

Project	Zone K							Zone J		Zone I		Zone H	
	SOUTH GATE 345	EGC 345	VALLEY STREAM 345	NEW BRIDGE RD 345	BARETT 138	BARETT 345	NORTHPORT 138	FARRAGUT 345	TREMONT 345	SPRAIN BROOK 345	DUNWOODIE 345	BUCHANAN 345	RAMAPO 345
T035 - LSPower	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T036 - NextEra Core 1	N/A	3	2	2	3	N/A	N/A	N/A	N/A	2	1	N/A	N/A
T037 - NextEra Core 2	N/A	2	2	2	3	N/A	N/A	1	N/A	2	1	N/A	N/A
T038 - NextEra Core 3	N/A	3	2	2	3	N/A	2	1	N/A	2	1	N/A	N/A
T039 - NextEra Core 4	N/A	4	2	2	3	N/A	2	1	N/A	1	1	N/A	N/A
T040 - NextEra Core 5	N/A	4	2	2	3	N/A	3	N/A	N/A	2	1	N/A	N/A
T041 - NextEra Core 6	N/A	4	2	2	3	N/A	1	N/A	N/A	2	1	N/A	N/A
T042 - NextEra Core 7	N/A	4	2	2	3	N/A	1	N/A	N/A	2	1	2	N/A
T043 - NextEra Enh 1	N/A	2	2	2	N/A	N/A	1	N/A	N/A	N/A	1	N/A	N/A
T044 - NextEra Enh 2	N/A	2	2	2	3	N/A	1	N/A	N/A	N/A	1	1	1
T047 - Propel Base 1	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T048 - Propel Base 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A
T049 - Propel Base 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T051 - Propel Alt 5	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T052 - Propel Alt 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T053 - Propel Alt 7	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Figure 5: Expandable POIs by Zone

Project	Zone K					Zone I
	LONG SHORE	EGC 345	BARETT 345	EASTERN QUEENS 138	SHORE ROAD 345	SPRAIN BROOK 345
T035 - LSPower	5	N/A	N/A	N/A	N/A	N/A
T036 - NextEra Core 1	N/A	N/A	N/A	N/A	N/A	N/A
T037 - NextEra Core 2	N/A	N/A	N/A	N/A	N/A	N/A
T038 - NextEra Core 3	N/A	N/A	N/A	N/A	N/A	N/A
T039 - NextEra Core 4	N/A	N/A	N/A	N/A	N/A	N/A
T040 - NextEra Core 5	N/A	N/A	N/A	N/A	N/A	N/A
T041 - NextEra Core 6	N/A	N/A	N/A	N/A	N/A	N/A
T042 - NextEra Core 7	N/A	N/A	N/A	N/A	N/A	N/A
T043 - NextEra Enh 1	N/A	N/A	N/A	N/A	N/A	N/A
T044 - NextEra Enh 2	N/A	N/A	N/A	N/A	N/A	N/A
T047 - Propel Base 1	N/A	N/A	N/A	N/A	N/A	1
T048 - Propel Base 2	N/A	N/A	N/A	N/A	N/A	1
T049 - Propel Base 3	N/A	N/A	N/A	N/A	N/A	1
T051 - Propel Alt 5	N/A	N/A	N/A	N/A	1	N/A
T052 - Propel Alt 6	N/A	1	N/A	1	1	N/A
T053 - Propel Alt 7	N/A	N/A	1	N/A	N/A	N/A

Appendix K: System Strength

Long Island Offshore Wind Export Public Policy Transmission Planning Report

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Appendix K: Operability & Resiliency – System Strength

System Strength

System Strength refers to system voltage and reactive strength performance. Short circuit ratio is a common screening method to obtain a high-level understanding of the system strength. In order to measure system strength with multiple inverter-based resources (IBRs) in close proximity to each other, the weighted short circuit ratio (WSCR) is calculated at critical points in the system. The WSCR is calculated with the formula below:

$$WSCR = \frac{\sum_i^n SCMVA_i \times P_{RMVAi}}{(\sum_i^n P_{RMVAi})^2}$$

Where $SCMVA_i$ is the short circuit capacity at bus i before the connection of IBR i and P_{RMVAi} is the MVA rating of IBR i to be connected. n is the number of IBRs and i is IBR.

Figure 1 shows the relative short circuit results at Barrett offshore wind Point of Interconnection (POI), Ruland Rd offshore wind POI, Holbrook offshore wind POI, and applicable HVDC POI(s) for the pre-project Baseline case and each post-project case. The WSCR was calculated under operating conditions with reduced synchronous generation using CY21 ATBA light load case for all-lines-in-service (N-0), and system outages loss of Y49 (N-1), outage of Y49 and Y50 (N-2), and loss of Y49, Y50, and a project tie line (N-3). The higher the WSCR number, the stronger the system is and generally the easier it is to integrate IBRs such as energy storage and offshore wind generation. The lower the WSCR number, the weaker the system is and there may additional system monitoring or studies required. NERC does not have a WSCR reliability criteria.

Figure 1: Summary of WSCR under Spring Light Load Condition (SLL)

Project	WSCR			
	N-0	N-1	N-2	N-3
Pre-Project	1.94	1.83	1.61	N/A
T035 - LS Power	0.82	0.78	0.70	N/A
T036 - NextEra Core 1	2.49	2.46	2.39	2.12
T037 - NextEra Core 2	2.65	2.63	2.59	2.47
T038 - NextEra Core 3	2.50	2.45	2.38	2.26
T039 - NextEra Core 4	2.55	2.49	2.40	2.17
T040 - NextEra Core 5	2.54	2.48	2.40	2.16
T041 - NextEra Core 6	1.79	1.75	1.68	1.45
T042 - NextEra Core 7	1.79	1.75	1.68	1.45
T043 - NextEra Enh 1	1.47	1.47	1.44	1.39
T044 - NextEra Enh 2	1.91	1.90	1.87	1.78
T047 - Propel Base 1	2.26	2.23	2.11	1.95

T048 - Propel Base 2	2.21	2.15	2.02	1.78
T049 - Propel Base 3	2.24	2.20	2.06	1.87
T051 - Propel Alt 5	2.29	2.26	2.17	2.09
T052 - Propel Alt 6	2.59	2.55	2.42	2.32
T053 - Propel Alt 7	1.34	1.31	1.21	1.07

Detailed calculation for pre-project cases and the case for each project are detailed in the following figures. In reviewing the following figures, the column titled, “Elements Out-of-Service,” indicates system conditions as N-0, N-1, N-2, and applicable N-3; column titled, “POI Name,” refers to the bus name where offshore wind or HVDC facilities connect; column titled, “ P_{RMVA} ,” is the MVA rating of offshore wind or HVDC facilities; column titled, “SCMVA,” is the short circuit capacity at each POI bus; column titled, “ $SCMVA \times P_{RMVA}$,” is the short circuit capacity at each POI bus by MVA rating of offshore wind or HVDC facilities at the same bus; column titled, “WSCR,” indicates the comparable system strength for each project under each system condition.

Figure 2: Pre-Project Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAXP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	6564	9186447	2.00
	Ruland Road 138 kV	889	6636	5896658	
	Holbrook 138 kV	977	6397	6250045	
Y49: EGC-Sprain Brook 345 kV	Barrett 138 kV	1399	6200	8676162	1.92
	Ruland Road 138 kV	889	6338	5631914	
	Holbrook 138 kV	977	6334	6187888	
Y49: EGC-Sprain Brook 34 5kV Y50: Shore Rd-Dunwoodie 345 kV	Barrett 138 kV	1399	5155	7213852	1.69
	Ruland Road 138 kV	889	5469	4859222	
	Holbrook 138 kV	977	6034	5895394	

Figure 3: T035 LS Power Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAXP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	6328	8856091	0.82
	Ruland Road 138 kV	889	6167	5479261	
	Holbrook 138 kV	977	6328	6182671	
	Southgate 345 kV	4314	6167	26604007	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	6197	8673125	0.78
	Ruland Road 138 kV	889	5811	5163622	
	Holbrook 138 kV	977	6197	6054938	
	Southgate 345 kV	4314	5811	25068438	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	5877	8224263	0.70
	Ruland Road 138 kV	889	5034	4473005	
	Holbrook 138 kV	977	5877	5741575	
	Southgate 345 kV	4314	5034	21715813	

Figure 4: T036 NextEra Core 1 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7912	11072528	2.49
	Ruland Road 138 kV	889	9837	8740666	
	Holbrook 138 kV	977	6850	6692450	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7727	10813627	2.45
	Ruland Road 138 kV	889	9749	8662474	
	Holbrook 138 kV	977	6840	6682680	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	7334	10263640	2.37
	Ruland Road 138 kV	889	9525	8463439	
	Holbrook 138 kV	977	6743	6587911	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Barrett 138 kV	1399	7098	9933367	2.10
	Ruland Road 138 kV	889	7128	6333584	
	Holbrook 138 kV	977	6269	6124813	

Figure 5: T037 NextEra Core 2 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	9175	12840046	2.65
	Ruland Road 138 kV	889	9722	8638483	
	Holbrook 138 kV	977	6947	6787219	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	9112	12751880	2.64
	Ruland Road 138 kV	889	9680	8601164	
	Holbrook 138 kV	977	6930	6770610	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	8926	12491580	2.60
	Ruland Road 138 kV	889	9563	8497204	
	Holbrook 138 kV	977	6868	6710036	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Barrett 138 kV	1399	8894	12446797	2.48
	Ruland Road 138 kV	889	8341	7411396	
	Holbrook 138 kV	977	6686	6532222	

Figure 6: T038 NextEra Core 3 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7921	11085123	2.50
	Ruland Road 138 kV	889	9603	8532746	
	Holbrook 138 kV	977	7205	7039285	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7695	10768845	2.46
	Ruland Road 138 kV	889	9488	8430562	
	Holbrook 138 kV	977	7177	7011929	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	7296	10210460	2.38
	Ruland Road 138 kV	889	9285	8250187	
	Holbrook 138 kV	977	7098	6934746	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Barrett 138 kV	1399	7199	10074713	2.27
	Ruland Road 138 kV	889	8207	7292330	
	Holbrook 138 kV	977	6980	6819460	

Figure 7: T039 NextEra Core 4 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7732	10820625	2.55
	Ruland Road 138 kV	889	10365	9209821	
	Holbrook 138 kV	977	7361	7191697	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7420	10383993	2.50
	Ruland Road 138 kV	889	10216	9077427	
	Holbrook 138 kV	977	7324	7155548	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	6930	9698258	2.41
	Ruland Road 138 kV	889	9985	8872172	
	Holbrook 138 kV	977	7236	7069572	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Barrett 138 kV	1399	6684	9353991	2.17
	Ruland Road 138 kV	889	7908	7026653	
	Holbrook 138 kV	977	6952	6792104	

Figure 8: T040 NextEra Core 5 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7717	10799633	2.55
	Ruland Road 138 kV	889	10321	9170725	
	Holbrook 138 kV	977	7334	7165318	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7408	10367200	2.49
	Ruland Road 138 kV	889	10174	9040108	
	Holbrook 138 kV	977	7298	7130146	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	6915	9677266	2.40
	Ruland Road 138 kV	889	9939	8831298	
	Holbrook 138 kV	977	7210	7044170	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Barrett 138 kV	1399	6669	9332999	2.17
	Ruland Road 138 kV	889	7869	6992000	
	Holbrook 138 kV	977	6926	6766702	

Figure 9: T041 NextEra Core 6 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7623	10668084	1.79
	Ruland Road 138 kV	889	9690	8610050	
	Holbrook 138 kV	977	6846	6688542	
	NPT_GIS 138 kV	1265	8543	10806895	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7306	10224455	1.75
	Ruland Road 138 kV	889	9513	8452776	
	Holbrook 138 kV	977	6805	6648485	
	NPT_GIS 138 kV	1265	8442	10679130	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	6793	9506532	1.69
	Ruland Road 138 kV	889	9212	8185323	
	Holbrook 138 kV	977	6684	6530268	
	NPT_GIS 138 kV	1265	8232	10413480	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Barrett 138 kV	1399	6437	9008324	1.45
	Ruland Road 138 kV	889	6653	5911523	
	Holbrook 138 kV	977	6141	5999757	
	NPT_GIS 138 kV	1265	7051	8919515	

Figure 10: T042 NextEra Core 7 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7626	10672282	1.79
	Ruland Road 138 kV	889	9693	8612715	
	Holbrook 138 kV	977	6848	6690496	
	NPT_GIS_138 138.00	1265	8545	10809425	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7308	10227254	1.76
	Ruland Road 138 kV	889	9516	8455442	
	Holbrook 138 kV	977	6807	6650439	
	NPT_GIS_138 138.00	1265	8444	10681660	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	6796	9510730	1.69
	Ruland Road 138 kV	889	9215	8187988	
	Holbrook 138 kV	977	6686	6532222	
	NPT_GIS_138 138.00	1265	8235	10417275	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Barrett 138 kV	1399	6439	9011123	1.45
	Ruland Road 138 kV	889	6655	5913300	
	Holbrook 138 kV	977	6142	6000734	
	NPT_GIS_138 138.00	1265	7052	8920780	

Figure 11: T043 NextEra Enh 1 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	8687	12157109	1.48
	Ruland Road 138 kV	889	9257	8225307	
	Holbrook 138 kV	977	7511	7338247	
	BAR_GIS_138	1265	8687	10989055	
Y49: EGC-Sprain Brook 345kV	NPT_GIS_138 138.00	1265	8651	10943515	1.47
	Barrett 138 kV	1399	8609	12047951	
	Ruland Road 138 kV	889	9213	8186211	
	Holbrook 138 kV	977	7497	7324569	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	BAR_GIS_138	1265	8609	10890385	1.44
	NPT_GIS_138 138.00	1265	8625	10910625	
	Barrett 138 kV	1399	8393	11745668	
	Ruland Road 138 kV	889	9074	8062703	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Holbrook 138 kV	977	7414	7243478	1.39
	BAR_GIS_138	1265	8393	10617145	
	NPT_GIS_138 138.00	1265	8516	10772740	
	Barrett 138 kV	1399	8384	11733073	

Figure 12: T044 NextEra Enh 2 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	8841	12372626	1.91
	Ruland Road 138 kV	889	9389	8342596	
	Holbrook 138 kV	977	7600	7425200	
	NPT_GIS_138 138.00	1265	8770	11094050	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	8757	12255071	1.90
	Ruland Road 138 kV	889	9338	8297280	
	Holbrook 138 kV	977	7580	7405660	
	NPT_GIS_138 138.00	1265	8737	11052305	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	8542	11954187	1.87
	Ruland Road 138 kV	889	9201	8175549	
	Holbrook 138 kV	977	7498	7325546	
	NPT_GIS_138 138.00	1265	8630	10916950	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Road 345 kV	Barrett 138 kV	1399	8523	11927598	1.78
	Ruland Road 138 kV	889	8097	7194589	
	Holbrook 138 kV	977	7270	7102790	
	NPT_GIS_138 138.00	1265	8203	10376795	

Figure 13: T047 Propel Base 1 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7911	11071128	2.33
	Ruland Road 138 kV	889	8160	7250568	
	Holbrook 138 kV	977	6678	6524406	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7728	10815027	2.28
	Ruland Road 138 kV	889	7952	7065750	
	Holbrook 138 kV	977	6621	6468717	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	7093	9926370	2.15
	Ruland Road 138 kV	889	7546	6704998	
	Holbrook 138 kV	977	6486	6336822	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Shore Road 345 kV	Barrett 138 kV	1399	6469	9053107	1.98
	Ruland Road 138 kV	889	6685	5939957	
	Holbrook 138 kV	977	6265	6120905	

Figure 14: T048 Propel Base 2 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7375	10321647	2.21
	Ruland Road 138 kV	889	7650	6797683	
	Holbrook 138 kV	977	6555	6403952	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7093	9926468	2.15
	Ruland Road 138 kV	889	7517	6679221	
	Holbrook 138 kV	977	6509	6359352	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	6442	9015069	2.02
	Ruland Road 138 kV	889	7132	6337236	
	Holbrook 138 kV	977	6356	6210173	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Rd 345 kV	Barrett 138 kV	1399	6138	8589536	1.78
	Ruland Road 138 kV	889	5224	4641341	
	Holbrook 138 kV	977	5902	5766655	

Figure 15: T049 Propel Base 3 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7697	10771644	2.29
	Ruland Road 138 kV	889	8032	7136834	
	Holbrook 138 kV	977	6628	6475556	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7539	10550529	2.25
	Ruland Road 138 kV	889	7870	6992889	
	Holbrook 138 kV	977	6599	6447223	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	6723	9408570	2.08
	Ruland Road 138 kV	889	7334	6516626	
	Holbrook 138 kV	977	6417	6269409	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Shore Road 345 kV	Barrett 138 kV	1399	6012	8413554	1.89
	Ruland Road 138 kV	889	6439	5721373	
	Holbrook 138 kV	977	6170	6028090	

Figure 16: T051 Propel Alt 5 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7625	10670980	2.29
	Ruland Road 138 kV	889	8125	7219869	
	Holbrook 138 kV	977	6633	6480802	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	7536	10546093	2.26
	Ruland Road 138 kV	889	8019	7125362	
	Holbrook 138 kV	977	6611	6459357	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	7095	9929770	2.17
	Ruland Road 138 kV	889	7713	6853306	
	Holbrook 138 kV	977	6507	6357583	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Shore Road 345 kV	Barrett 138 kV	1399	6827	9554589	2.09
	Ruland Road 138 kV	889	7290	6477343	
	Holbrook 138 kV	977	6411	6264016	

Figure 17: T052 Propel Alt 6 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	9859	13796660	2.59
	Ruland Road 138 kV	889	8195	7281685	
	Holbrook 138 kV	977	6652	6499141	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	9652	13507308	2.55
	Ruland Road 138 kV	889	8109	7205545	
	Holbrook 138 kV	977	6633	6480763	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	8962	12541835	2.42
	Ruland Road 138 kV	889	7755	6890963	
	Holbrook 138 kV	977	6520	6370138	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Shore Road 345 kV	Barrett 138 kV	1399	8459	11837640	2.32
	Ruland Road 138 kV	889	7383	6560262	
	Holbrook 138 kV	977	6433	6285344	

Figure 18: T053 Propel Alt 7 Detailed WSCR under SLL

Elements Out-of-Service	POI Name	Inverter MVA	SCMVA	SCMVAxP _{RMVA}	WSCR
Base Case N-0	Barrett 138 kV	1399	7256	10154846	1.34
	Ruland Road 138 kV	889	7501	6664765	
	Holbrook 138 kV	977	6495	6345146	
	Northport 345 kV	1500	4807	7209855	
Y49: EGC-Sprain Brook 345kV	Barrett 138 kV	1399	6941	9714156	1.31
	Ruland Road 138 kV	889	7349	6529838	
	Holbrook 138 kV	977	6442	6293492	
	Northport 345 kV	1500	4754	7131375	
Y49: EGC-Sprain Brook 345kV Y50: Shore Rd-Dunwoodie 345kV	Barrett 138 kV	1399	6008	8407382	1.21
	Ruland Road 138 kV	889	6852	6088389	
	Holbrook 138 kV	977	6243	6099606	
	Northport 345 kV	1500	4553	6829365	
Y49: EGC-Sprain Brook 345kV, Y50: Shore Rd-Dunwoodie 345kV Project Tie: Sprain Brook to Ruland Rd 345 kV	Barrett 138 kV	1399	5643	7896803	1.07
	Ruland Road 138 kV	889	4989	4432612	
	Holbrook 138 kV	977	5763	5630500	
	Northport 345 kV	1500	4208	6311820	

Appendix L: Production Cost & Performance

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



Appendix L: Production Cost Benefits

NYISO Production Cost Model

In analyzing the production cost metric, the NYISO utilizes production cost models developed in MAPS (Multi-Area Production Simulation) to analyze system congestion under various future scenarios and system conditions. The software performs a security-constrained economic commitment and dispatch and optimizes for the minimum hourly production cost of supply resources to meet the load plus losses.

The NYISO's production cost model optimizes 4-pool (NYISO, PJM, ISO-NE and IESO) generation to match the load in each hour with the aim of minimizing the overall system production cost.

Production cost models require input data to develop cost curves for the resources that the model will commit and dispatch to serve the load, subject to the constraints included in the model. Generator inputs to the model include generator heat rates, fuel price forecasts, emission price forecasts, and hourly generation profiles for renewable resources. Transmission inputs include an explicit nodal model and individual constraints, contingencies, and interface limitations. Peak and annual demand forecasts for each area/zone in each pool, as well as hourly load patterns, are the key inputs to formulate the load representation in the production cost model.

The NYISO's production cost simulations provide estimates of future system behavior based on the detailed inputs to the model. Results are available up to an hourly resolution and include metrics such as generation, load, LBMP, generator production cost, imports/exports, renewable generation curtailment, etc. System production cost is an industry recognized metric that can be used to measure the economic cost of meeting electricity demand with generation.

Project Evaluation Using Production Cost Models

Production cost simulations can be utilized to gauge the effectiveness of a proposed transmission project in reducing NYCA wide production cost. A pre-project case is first simulated without a project in place to establish a baseline for comparison with all of the assumptions included for the model. A post-project case with the transmission project added to the underlying transmission model is then simulated and metrics are compared to the pre-project case. Production cost savings for a project is calculated as the difference between the pre-project and post-project results over the duration of a project's study period, starting at the estimated in-service date and extending 20 years.

NYCA production cost is the total generation cost of producing power to serve NYCA load. The total cost includes the following components:

1. Fuel cost (fuel consumption mmBtu multiplied by fuel cost \$/mmBtu);
2. Variable operations and maintenance (O&M) cost (VOM adder \$/MWh);
3. Emission cost (emission allowance price multiplied by total allowance);
4. Start-up cost (number of starts multiplied by start-up cost); and
5. NYCA Imports and Exports evaluated at the solution case proxy bus LBMP values.

$$\text{NYCA wide Production Cost} = \sum_{n=1}^{8760} \{ \text{NYCA Generator Costs}_n + \text{Import Costs}_n - \text{Export Costs}_n \}$$

Generation resources with no variable cost (*e.g.*, solar, wind, and hydro) do not contribute to production cost given that they produce energy for \$0/MWh. Any Renewable Energy Credit (REC) subsidies for each of these resource types are modeled as a negative “bid adder” and are solely used to create a dispatch order and do not contribute to production cost.

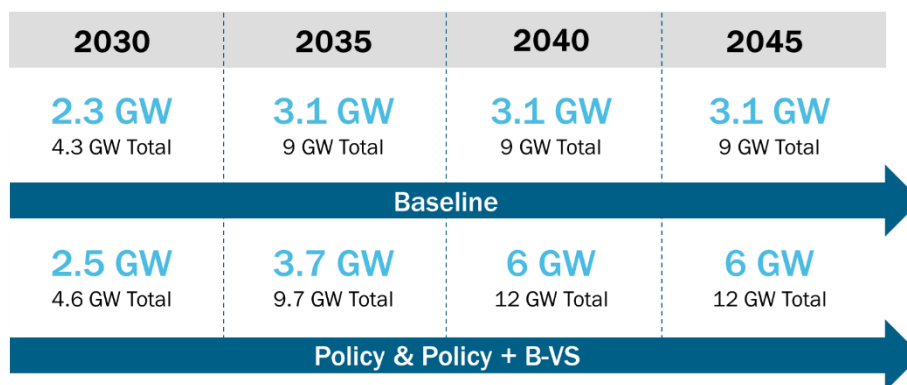
Assumptions for Production Cost Analysis

The production cost model used for the Long Island Offshore Wind Export Public Policy Transmission Need (Long Island PPTN) evaluation utilizes the *2021-2040 System and Resource Outlook* (Outlook) Contract Case as the starting point for the “Baseline” Scenario. The “Policy” Scenario for the Long Island PPTN evaluation is largely derived from the Outlook Policy S2 Case. The “Policy + Barrett-Valley Stream (B-VS)” Scenario is the Policy Scenario with the inclusion of the Barrett-Valley Stream constraint. The Outlook study period is from 2021 to 2040, whereas the Long Island PPTN study period is from 2030-2050. The NYISO simulated discrete years at 5-year intervals to provide a reasonable representation of the twenty-year study period without simulating each year of production cost data.

The following key changes were applied to the Long Island PPTN pre-project cases compared to the Outlook's Contract and Policy S2 cases:

- Extended load forecast, fuel price forecast, and emission price forecast to 2045 to be modeled in production cost simulations. 2045 is considered as the proxy year to represent system conditions from 2045-2050.
- Increased offshore wind capacity and points of interconnection in both the Baseline and Policy Scenarios for the Long Island PPTN compared to the Outlook Contract and Policy S2 cases. The following figure shows the increased capacity and timeline of offshore wind resource installation.

Figure 1: Timeline of Offshore Wind Installation in Production Cost Analyses



- Lower kV constraints (less than 115 kV) are relaxed in Long Island for the Baseline Scenario.
- Constraints lower than 69 kV are relaxed in New York City and Long Island for the Policy Scenario. For all other zones in the Policy Scenario, all constraints lower than 230 kV are relaxed beyond 2040.
- Barrett – Valley Stream, Valley Stream – East Garden City (secure for the reverse direction from East Garden City – Valley Stream), Barrett – Freeport, and Freeport – Newbridge 138 kV lines are relaxed for the Policy Scenario (However, the Policy + B-VS Scenario removes this assumption).

Pre-Project Case Results

The pre-project cases were run for the Long Island PPTN Baseline Scenario, the Long Island PPTN Policy Scenario, and the Long Island PPTN Policy + B-VS Scenario. The pre-project case results provide a reference set of data points which can be compared against the results produced after the project is put in-service. The pre-project cases show that there is significant curtailment, especially in the Policy and Policy + B-VS Scenarios, of offshore wind resources in Long Island. Curtailment of low-cost resources, such as offshore wind, can be caused by constraints either local or on the bulk level. This curtailment can cause other higher cost resources to be dispatched to serve load either on Long Island or in the neighboring regions.

Figure 2: Pre-Project Production Cost Results

Area	Values	Baseline				Policy				Policy + B-VS			
		2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Long Island	OSW Capacity (MW)	2,279	3,079	3,079	3,079	2,539	3,689	5,989	5,989	2,539	3,689	5,989	5,989
	Potential Energy Production (GWh)	8,927	12,153	12,190	12,145	9,974	14,622	24,048	23,965	9,974	14,622	24,048	23,965
	Curtailment (GWh)	49	520	345	147	173	538	3,131	2,473	2,440	2,358	3,823	3,273
	Curtailment Rate (%)	1%	4%	3%	1%	2%	4%	13%	10%	24%	16%	16%	14%
NYC	OSW Capacity (MW)	2,046	5,976	5,976	5,976	2,046	5,976	5,976	5,976	2,046	5,976	5,976	5,976
	Potential Energy Production (GWh)	8,368	22,929	23,020	22,928	8,368	22,931	23,022	22,929	8,368	22,931	23,022	22,929
	Curtailment (GWh)	4	83	3	0	1	2	2	16	2	2	2	19
	Curtailment Rate (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Long Island has five tie interfaces, including connections to Dunwoodie (Y49 and Y50), PJM (Neptune), NY City (Jamaica-Corona), Cross Sound Cable, and Northport Norwalk (ISONE). Two of the interfaces (Neptune and Cross Sound Cable) are only scheduled to import energy into Long Island. The limited export capability from Long Island in the pre-project cases limits the amount of low-cost energy produced by offshore wind resources to serve load outside of Long Island in periods when the output from these resources is high. The Dunwoodie-Long Island interface is consistently one of the most congested interfaces in the NYCA. The two tie-lines (Y49 and Y50) transfer power from the lower Hudson Valley to Long Island. The flow is higher in the Baseline Scenario compared to the Policy Scenarios due to the difference in the assumed offshore wind injections in Long Island. The Policy Scenarios have higher offshore wind injections in Long Island that push back on the imports from this interface.

The Long Island PPTN post-project cases all improve the export capability of Long Island by adding tie-lines between Long Island and the lower Hudson Valley. This added transfer capacity/headroom and upgrades to the internal Long Island system reduces the amount of curtailment from offshore wind resources that can be used to offset more expensive generation in New York or Imports from neighboring regions.

Post-Project Results

Production cost savings for each project is calculated by taking the difference between the pre- and post-project NYCA-wide production costs. Production cost savings are achieved when transmission projects unbottle cheaper resources in the system that replace more expensive generation, resulting in the reduction of the overall cost of serving load. Transmission projects provide additional electrical pathways that may be used by generators to serve load and, therefore, can decrease transmission congestion.

Production cost savings are also achieved by offsetting higher cost energy imports from neighboring regions with lower cost internal generation previously inaccessible due to transmission congestion. In general, all of the proposed projects to address the Long Island PPTN produce savings by unbottling offshore wind resources in Long Island and reducing the amount of imports from neighboring regions. The figures below show the estimated production cost savings for each project over a 20-year period in 2022 real million dollars.¹

¹ To calculate the net present value of future production cost savings, each 5-year savings calculation (e.g., 2025, 2030, 2040, and 2045) was assumed to persist for the following 4 years. The full 20-year stream of savings was then discounted to the 2022 year using a 7.05% discount rate.

Figure 3: Estimated 20-year Production Cost Savings (2022 \$M)

Estimated Total 20-Year Savings (2022 \$M)			
Project	Baseline	Policy	Policy + B-VS
T035 - LS Power	104	340	906
T036 - NextEra Core 1	108	303	291
T037 - NextEra Core 2	108	364	378
T038 - NextEra Core 3	109	380	402
T039 - NextEra Core 4	39	305	307
T040 - NextEra Core 5	107	339	332
T041 - NextEra Core 6	110	291	308
T042 - NextEra Core 7	110	291	308
T043 - NextEra Enh 1	87	458	745
T044 - NextEra Enh 2	81	441	582
T047 - Propel Base 1	109	337	568
T048 - Propel Base 2	99	313	513
T049 - Propel Base 3	102	344	902
T051 - Propel Alt 5	104	341	609
T052 - Propel Alt 6	96	352	618
T053 - Propel Alt 7	108	360	622

Figure 4: Production Cost Savings Over 20 Years (2022 \$M)

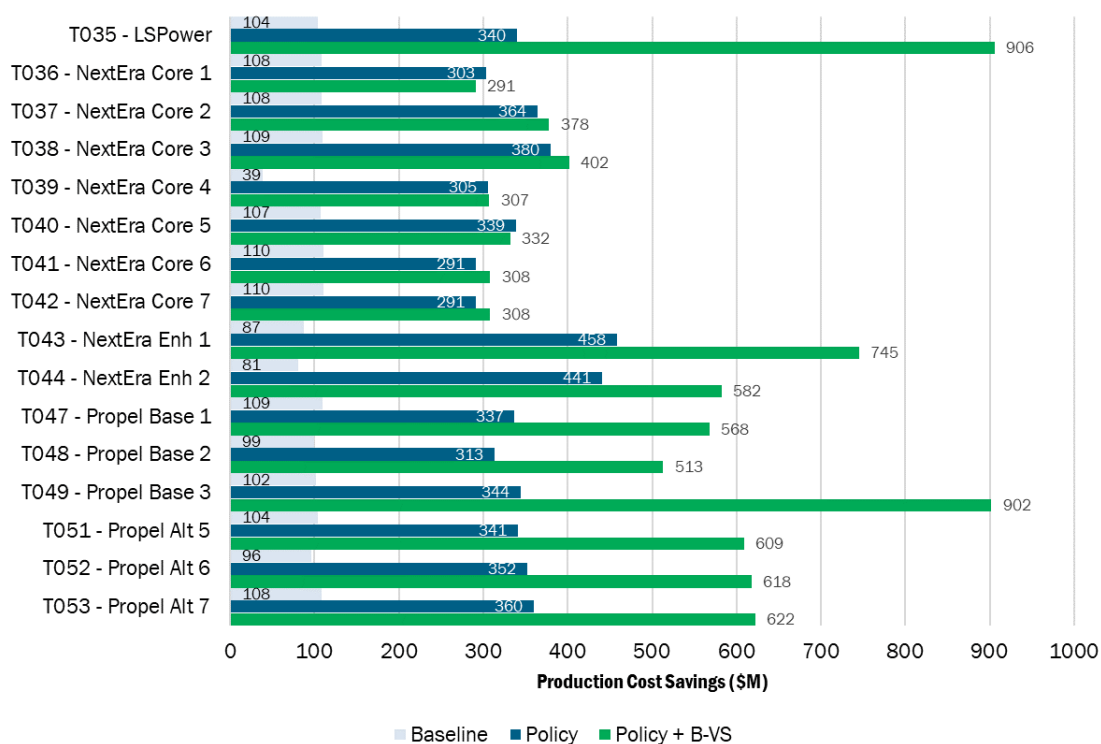
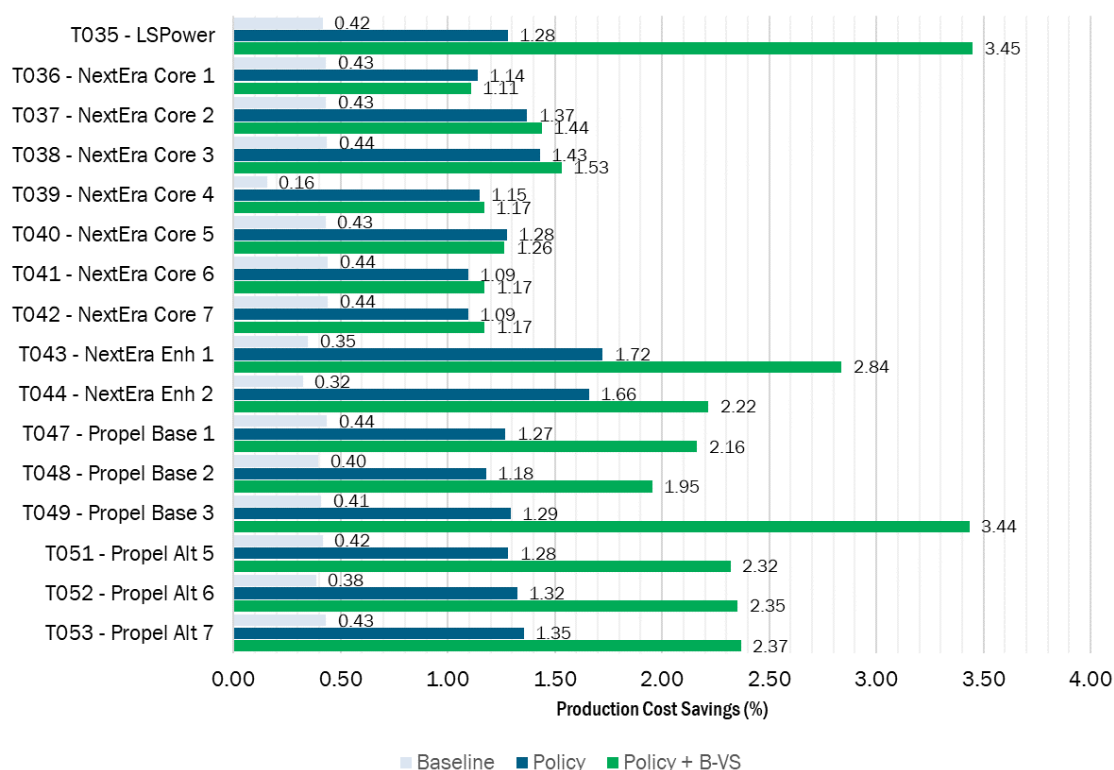


Figure 5: Savings As Percentage of Total NYCA-Wide Production Cost



Performance Evaluation

The performance evaluation leverages the same models and simulations from the production cost analysis but evaluates several metrics related to the performance of the system. The transmission utilization, energy deliverability, and CO₂ emissions assessments help to quantify the impacts that projects may have on the NYCA.

Transmission Utilization

The performance of a project is evaluated based on its ability to efficiently utilize the transmission network to increase energy transfers between Long Island and the rest of NYCA. The transmission utilization metric is the total annual energy transferred (MWh) over an interface. The results help determine the effectiveness of a transmission project to export offshore wind energy off Long Island and to import energy when needed.

For the purposes of this analysis, transmission utilization is measured as the total annual energy transacted across existing and proposed project inter-zonal transmission paths that interconnect to the Long Island (Zone K). This also includes transmission paths that connect to other areas within the NYCA and external to the NYCA.

Flows across the tie-lines from Long Island to the rest of NYCA and neighboring regions are divided into import and export energy, which are netted on an hourly basis and summed over each year. The 20-year flow estimates are calculated assuming equal flows over the 5-year period in between the simulation years.

Figure 6: 20-Year Transmission Utilization

Project	LI Import (GWh)			LI Export (GWh)		
	Baseline	Policy	Policy + B-VS	Baseline	Policy	Policy + B-VS
Pre-Project	128,203	137,924	150,138	36,543	45,638	29,773
T035 - LSPower	134,901	145,977	145,684	42,958	74,206	74,441
T036 - NextEra Core 1	135,401	146,953	157,176	43,372	76,282	47,112
T037 - NextEra Core 2	135,356	146,562	155,695	43,332	75,632	46,960
T038 - NextEra Core 3	135,257	146,038	154,698	43,332	77,270	49,252
T039 - NextEra Core 4	137,528	147,944	157,249	43,277	77,443	48,935
T040 - NextEra Core 5	135,255	146,126	155,461	43,330	77,349	48,845
T041 - NextEra Core 6	135,221	145,736	154,695	43,398	77,666	49,683
T042 - NextEra Core 7	135,221	145,736	154,695	43,398	77,666	49,683
T043 - NextEra Enh 1	136,582	148,041	151,887	43,504	78,588	62,645
T044 - NextEra Enh 2	135,766	147,394	153,636	43,633	78,598	59,281
T047 - Propel Base 1	134,827	146,389	150,252	43,290	75,872	56,366
T048 - Propel Base 2	134,912	146,323	149,796	43,349	72,302	55,344
T049 - Propel Base 3	134,971	146,754	146,604	43,260	76,075	73,178
T051 - Propel Alt 5	135,539	148,786	149,989	43,216	60,499	59,505
T052 - Propel Alt 6	135,243	146,662	150,333	43,271	77,269	59,574
T053 - Propel Alt 7	134,975	145,721	149,130	43,409	77,148	59,591

Energy Deliverability

The performance analysis also considers the energy deliverability impact of proposed projects on projected offshore wind resources. Energy deliverability represents the ability of renewable generation (e.g., wind, solar, and hydro) to inject energy into the grid to serve end-use consumers without curtailment. It is expressed as the ratio of energy generated to total potential energy for those resources. Generally, energy deliverability is reduced as more renewable capacity is added to the system due to the transmission constraints in the system. The greater the renewable generation curtailment in a specific location, the greater the opportunity for transmission investment.

$$\text{Energy Deliverability (\%)} = \frac{\text{Annual Energy Production (GWh)}}{\text{Potential Annual Energy Production (GWh)}}$$

$$\text{Energy Deliverability (\%)} = 100\% - \text{Curtailment (\%)}$$

Constraints in the existing system and new constraints that may be binding in a scenario with high penetration of offshore wind limit the amount of renewable energy that can be utilized to serve load. To enable effective use of these resources, proposed projects need to address congestion at the local and bulk transmission levels to increase energy deliverability. Projects that enable high energy deliverability (and thus lower curtailments) displace more costly generation dispatch in the system or imports from

neighboring regions. This is reflected in the total production cost savings achieved by the project.

Figure 7: Baseline Scenario LI OSW Curtailment and Energy Deliverability

Project	Sum of Scheduled Energy (GWh)				Sum of Curtailed Energy (GWh)				20-year Energy
	2030	2035	2040	2045	2030	2035	2040	2045	
Baseline Case (Pre-Project)	8,927	12,153	12,190	12,145	49	520	345	147	98%
T035 - LS Power	8,927	12,153	12,190	12,145	0	0	0	0	100%
T036 - NextEra Core 1	8,927	12,153	12,190	12,145	4	0	1	1	100%
T037 - NextEra Core 2	8,927	12,153	12,190	12,145	3	0	0	0	100%
T038 - NextEra Core 3	8,927	12,153	12,190	12,145	3	0	0	0	100%
T039 - NextEra Core 4	8,927	12,153	12,190	12,145	4	0	1	2	100%
T040 - NextEra Core 5	8,927	12,153	12,190	12,145	4	0	0	1	100%
T041 - NextEra Core 6	8,927	12,153	12,190	12,145	3	0	0	1	100%
T042 - NextEra Core 7	8,927	12,153	12,190	12,145	3	0	0	1	100%
T043 - NextEra Enh 1	8,927	12,153	12,190	12,145	0	1	0	0	100%
T044 - NextEra Enh 2	8,927	12,153	12,190	12,145	0	0	0	0	100%
T047 - Propel Base 1	8,927	12,153	12,190	12,145	3	1	0	1	100%
T048 - Propel Base 2	8,927	12,153	12,190	12,145	3	0	0	1	100%
T049 - Propel Base 3	8,927	12,153	12,190	12,145	3	0	0	1	100%
T051 - Propel Alt 5	8,927	12,153	12,190	12,145	2	0	0	0	100%
T052 - Propel Alt 6	8,927	12,153	12,190	12,145	2	0	0	1	100%
T053 - Propel Alt 7	8,927	12,153	12,190	12,145	3	0	0	0	100%

Figure 8: Policy Scenario LI OSW Curtailment and Energy Deliverability

Project	Sum of Scheduled Energy (GWh)				Sum of Curtailed Energy (GWh)				20-year Energy
	2030	2035	2040	2045	2030	2035	2040	2045	
Policy Case (Pre-Project)	9,974	14,622	24,048	23,965	173	538	3,131	2,473	91%
T035 - LS Power	9,974	14,622	24,048	23,965	48	9	383	388	99%
T036 - NextEra Core 1	9,974	14,622	24,048	23,965	103	20	206	178	99%
T037 - NextEra Core 2	9,974	14,622	24,048	23,965	99	19	215	224	99%
T038 - NextEra Core 3	9,974	14,622	24,048	23,965	97	18	44	59	100%
T039 - NextEra Core 4	9,974	14,622	24,048	23,965	101	22	87	41	100%
T040 - NextEra Core 5	9,974	14,622	24,048	23,965	103	22	85	90	100%
T041 - NextEra Core 6	9,974	14,622	24,048	23,965	94	16	58	54	100%
T042 - NextEra Core 7	9,974	14,622	24,048	23,965	94	16	58	54	100%
T043 - NextEra Enh 1	9,974	14,622	24,048	23,965	0	0	3	7	100%
T044 - NextEra Enh 2	9,974	14,622	24,048	23,965	0	1	5	4	100%
T047 - Propel Base 1	9,974	14,622	24,048	23,965	94	17	212	148	99%
T048 - Propel Base 2	9,974	14,622	24,048	23,965	95	18	651	469	98%
T049 - Propel Base 3	9,974	14,622	24,048	23,965	95	16	209	106	99%
T051 - Propel Alt 5	9,974	14,622	24,048	23,965	76	14	52	46	100%
T052 - Propel Alt 6	9,974	14,622	24,048	23,965	84	14	53	29	100%
T053 - Propel Alt 7	9,974	14,622	24,048	23,965	93	19	67	77	100%

Figure 9: Policy + B-VS Scenario LI OSW Curtailment and Energy Deliverability

Project	Sum of Scheduled Energy (GWh)				Sum of Curtailed Energy (GWh)				20-year Energy
	2030	2035	2040	2045	2030	2035	2040	2045	
Policy Case + B-VS (Pre-Project)	9,974	14,622	24,048	23,965	2,440	2,358	3,823	3,273	84%
T035 - LS Power	9,974	14,622	24,048	23,965	47	10	387	376	99%
T036 - NextEra Core 1	9,974	14,622	24,048	23,965	2,057	1,910	2,001	1,891	89%
T037 - NextEra Core 2	9,974	14,622	24,048	23,965	2,005	1,852	1,918	1,848	90%
T038 - NextEra Core 3	9,974	14,622	24,048	23,965	1,947	1,782	1,745	1,700	90%
T039 - NextEra Core 4	9,974	14,622	24,048	23,965	2,030	1,856	1,838	1,747	90%
T040 - NextEra Core 5	9,974	14,622	24,048	23,965	2,031	1,857	1,854	1,794	90%
T041 - NextEra Core 6	9,974	14,622	24,048	23,965	2,000	1,853	1,728	1,664	90%
T042 - NextEra Core 7	9,974	14,622	24,048	23,965	2,000	1,853	1,728	1,664	90%
T043 - NextEra Enh 1	9,974	14,622	24,048	23,965	1,038	955	842	780	95%
T044 - NextEra Enh 2	9,974	14,622	24,048	23,965	1,816	1,707	1,563	4	93%
T047 - Propel Base 1	9,974	14,622	24,048	23,965	1,239	1,114	1,385	1,212	93%
T048 - Propel Base 2	9,974	14,622	24,048	23,965	1,389	1,252	1,530	1,457	92%
T049 - Propel Base 3	9,974	14,622	24,048	23,965	104	26	551	348	99%
T051 - Propel Alt 5	9,974	14,622	24,048	23,965	1,134	1,002	1,079	1,009	94%
T052 - Propel Alt 6	9,974	14,622	24,048	23,965	1,245	1,092	1,001	892	94%
T053 - Propel Alt 7	9,974	14,622	24,048	23,965	1,213	1,076	1,046	1,015	94%

CO₂ Emissions

Figure 10: Annual NYCA CO₂ Emissions in Policy Scenarios

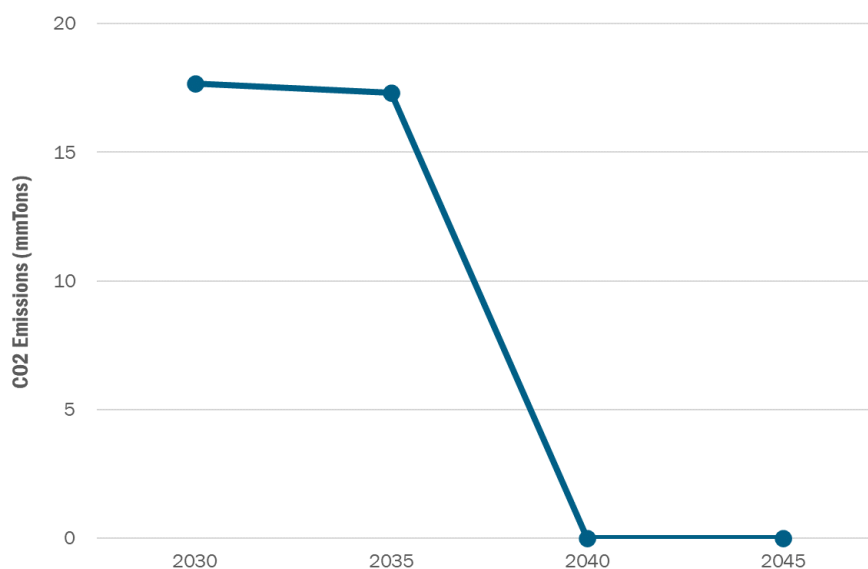


Figure 11: Baseline Scenario CO₂ Emissions

20-Year Estimated CO ₂ Emissions (Million Tons)				
Project	LI	NYC	NYCA	Regional
Baseline (Pre-Project)	53	194	450	8,248
T035 - LS Power	49	197	451	8,246
T036 - NextEra Core 1	49	197	451	8,246
T037 - NextEra Core 2	49	196	451	8,245
T038 - NextEra Core 3	49	196	451	8,246
T039 - NextEra Core 4	48	201	452	8,246
T040 - NextEra Core 5	49	197	451	8,246
T041 - NextEra Core 6	49	197	451	8,246
T042 - NextEra Core 7	49	197	451	8,246
T043 - NextEra Enh 1	48	198	451	8,247
T044 - NextEra Enh 2	49	199	453	8,245
T047 - Propel Base 1	49	197	451	8,244
T048 - Propel Base 2	49	197	451	8,245
T049 - Propel Base 3	49	197	453	8,244
T051 - Propel Alt 5	49	197	451	8,245
T052 - Propel Alt 6	49	197	451	8,245
T053 - Propel Alt 7	49	197	451	8,245

Figure 12: Policy Scenario CO₂ Emissions

20-Year Estimated CO ₂ Emissions (Million Tons)				
Project	LI	NYC	NYCA	Regional
Policy (Pre-Project)	24	70	175	8,060
T035 - LS Power	22	72	176	8,056
T036 - NextEra Core 1	22	71	175	8,057
T037 - NextEra Core 2	22	72	176	8,056
T038 - NextEra Core 3	22	72	176	8,057
T039 - NextEra Core 4	22	72	177	8,054
T040 - NextEra Core 5	22	72	176	8,057
T041 - NextEra Core 6	22	71	175	8,058
T042 - NextEra Core 7	22	71	175	8,058
T043 - NextEra Enh 1	22	71	177	8,053
T044 - NextEra Enh 2	22	72	177	8,052
T047 - Propel Base 1	22	72	176	8,051
T048 - Propel Base 2	22	72	176	8,056
T049 - Propel Base 3	22	72	176	8,052
T051 - Propel Alt 5	22	72	176	8,056
T052 - Propel Alt 6	22	72	176	8,056
T053 - Propel Alt 7	22	72	176	8,056

Figure 13: Policy + Barrett–Valley Stream Scenario CO₂ Emissions

20-Year Estimated CO ₂ Emissions (Million Tons)				
Project	LI	NYC	NYCA	Regional
Policy + B-VS (Pre-Project)	24	72	179	8,072
T035 - LS Power	22	72	176	8,056
T036 - NextEra Core 1	21	72	179	8,071
T037 - NextEra Core 2	21	73	180	8,069
T038 - NextEra Core 3	21	73	179	8,069
T039 - NextEra Core 4	21	73	179	8,066
T040 - NextEra Core 5	21	73	179	8,070
T041 - NextEra Core 6	21	72	178	8,070
T042 - NextEra Core 7	21	72	178	8,070
T043 - NextEra Enh 1	22	72	178	8,061
T044 - NextEra Enh 2	22	73	181	8,062
T047 - Propel Base 1	22	72	178	8,058
T048 - Propel Base 2	22	72	178	8,063
T049 - Propel Base 3	22	72	176	8,052
T051 - Propel Alt 5	22	72	178	8,063
T052 - Propel Alt 6	22	72	178	8,063
T053 - Propel Alt 7	22	72	178	8,063

Additional Production Cost Results

NYCA Import/Export

The NYCA-wide production cost savings are also impacted by changes in the Import and Export flows on the NYCA ties with neighboring regions. Therefore, an overall reduction in net Imports (Imports – Exports) amounts due to the addition of a project results to higher production cost savings. Reduction in net Imports also represents higher utilization of in-state resources (e.g., offshore wind) that displaces Imports from neighboring regions to serve load. The following figures show the Import, Export, and net Import flows to all four neighboring regions for New York. Projects with larger reductions in net Imports correspond to higher production cost savings.

Figure 14: Baseline Scenario NYCA Import/Export Delta Flows

Project	20-Year Export Energy (GWh)				20-Year Import Energy (GWh)				20-Year Net-Import Energy (GWh)			
	HQ	IESO	PJM	ISONE	HQ	IESO	PJM	ISONE	HQ	IESO	PJM	ISONE
Baseline Case (Pre-Project)	226	82,519	18,104	164,557	230,067	11,027	230,607	22,170	229,841	(71,492)	212,502	(142,387)
T035 - LS Power	0	168	874	(5,283)	(432)	(375)	(2,496)	(8,520)	(432)	(543)	(3,370)	(3,237)
T036 - NextEra Core 1	0	251	1,043	(6,105)	(600)	(388)	(2,731)	(8,650)	(600)	(639)	(3,774)	(2,545)
T037 - NextEra Core 2	0	258	990	(5,823)	(691)	(426)	(2,404)	(8,604)	(691)	(685)	(3,395)	(2,781)
T038 - NextEra Core 3	(0)	170	1,094	(6,041)	(695)	(374)	(2,678)	(8,594)	(695)	(543)	(3,773)	(2,552)
T039 - NextEra Core 4	(0)	307	844	(5,238)	(653)	(419)	(1,805)	(9,930)	(653)	(726)	(2,650)	(4,691)
T040 - NextEra Core 5	0	173	1,022	(5,865)	(603)	(360)	(2,866)	(8,548)	(603)	(533)	(3,888)	(2,684)
T041 - NextEra Core 6	0	220	1,096	(6,086)	(606)	(384)	(2,913)	(8,556)	(606)	(604)	(4,009)	(2,471)
T042 - NextEra Core 7	0	220	1,096	(6,086)	(606)	(384)	(2,913)	(8,556)	(606)	(604)	(4,009)	(2,471)
T043 - NextEra Enh 1	0	88	802	(6,654)	(664)	(426)	(3,814)	(9,606)	(664)	(514)	(4,616)	(2,952)
T044 - NextEra Enh 2	0	126	873	(7,544)	(657)	(825)	(8,914)	(8,981)	(657)	(950)	(9,787)	(1,437)
T047 - Propel Base 1	0	182	1,022	(5,801)	(432)	(386)	(3,300)	(8,685)	(432)	(568)	(4,322)	(2,884)
T048 - Propel Base 2	0	153	992	(6,156)	(440)	(430)	(3,404)	(8,704)	(440)	(583)	(4,396)	(2,548)
T049 - Propel Base 3	(0)	981	1,382	(7,419)	(447)	(619)	(8,053)	(8,656)	(447)	(1,600)	(9,435)	(1,237)
T051 - Propel Alt 5	0	187	1,029	(5,854)	(439)	(465)	(3,185)	(8,694)	(439)	(653)	(4,214)	(2,840)
T052 - Propel Alt 6	0	188	1,004	(6,136)	(462)	(475)	(3,471)	(8,697)	(462)	(663)	(4,474)	(2,561)
T053 - Propel Alt 7	0	233	1,004	(6,302)	(470)	(471)	(3,457)	(8,620)	(470)	(704)	(4,461)	(2,318)

Change in Import/Export (GWh)

Figure 15: Policy Scenario NYCA Import/Export Delta Flows

Project	20-Year Export Energy (GWh)				20-Year Import Energy (GWh)				20-Year Net-Import Energy (GWh)			
	HQ	IESO	PJM	ISONE	HQ	IESO	PJM	ISONE	HQ	IESO	PJM	ISONE
Policy Case (Pre-Project)	226	120,144	63,495	120,492	387,404	18,766	259,665	100,514	387,178	(101,378)	196,170	(19,978)
T035 - LS Power	(0)	654	2,230	1,052	(3,936)	(644)	(1,016)	(6,964)	(3,936)	(1,298)	(3,246)	(8,015)
T036 - NextEra Core 1	(0)	812	2,130	1,190	(4,607)	(517)	363	(7,321)	(4,607)	(1,330)	(1,767)	(8,511)
T037 - NextEra Core 2	(0)	462	2,499	291	(3,888)	(457)	(4,178)	(7,228)	(3,888)	(919)	(6,677)	(7,520)
T038 - NextEra Core 3	(0)	581	2,480	313	(4,061)	(430)	(4,169)	(7,964)	(4,061)	(1,011)	(6,648)	(8,277)
T039 - NextEra Core 4	(0)	533	3,078	1,643	(4,004)	(455)	(5,020)	(9,792)	(4,004)	(988)	(8,098)	(11,436)
T040 - NextEra Core 5	(0)	597	2,321	1,034	(4,445)	(509)	(2,440)	(8,160)	(4,445)	(1,106)	(4,761)	(9,193)
T041 - NextEra Core 6	(0)	864	2,277	(498)	(4,695)	(593)	(152)	(7,411)	(4,695)	(1,457)	(2,429)	(6,913)
T042 - NextEra Core 7	(0)	864	2,277	(498)	(4,695)	(593)	(152)	(7,411)	(4,695)	(1,457)	(2,429)	(6,913)
T043 - NextEra Enh 1	(0)	614	3,635	1,077	(3,702)	(556)	(6,614)	(7,910)	(3,702)	(1,170)	(10,249)	(8,987)
T044 - NextEra Enh 2	(0)	853	4,482	1,411	(3,061)	(406)	(9,796)	(8,500)	(3,061)	(1,259)	(14,278)	(9,910)
T047 - Propel Base 1	(0)	1,002	2,370	137	(4,252)	(656)	(3,277)	(7,630)	(4,252)	(1,658)	(5,647)	(7,767)
T048 - Propel Base 2	(0)	657	1,842	1,249	(3,500)	(499)	(1,287)	(7,582)	(3,500)	(1,156)	(3,129)	(8,832)
T049 - Propel Base 3	(0)	1,014	2,327	756	(4,361)	(659)	(3,144)	(7,722)	(4,361)	(1,672)	(5,472)	(8,478)
T051 - Propel Alt 5	(0)	392	1,018	(2,304)	(3,891)	(302)	2,592	(5,124)	(3,891)	(695)	1,574	(2,820)
T052 - Propel Alt 6	(0)	772	2,254	1,104	(4,340)	(565)	(2,008)	(7,794)	(4,340)	(1,336)	(4,262)	(8,898)
T053 - Propel Alt 7	(0)	749	2,295	907	(4,336)	(591)	(2,076)	(7,674)	(4,336)	(1,340)	(4,372)	(8,582)

Change in Import/Export (GWh)

Figure 16: Policy + B-VS Scenario NYCA Import/Export Delta Flows

Project	20-Year Export Energy (GWh)				20-Year Import Energy (GWh)				20-Year Net-Import Energy (GWh)			
	HQ	IESO	PJM	ISONE	HQ	IESO	PJM	ISONE	HQ	IESO	PJM	ISONE
Policy Case + B-VS (Pre-Project)	226	119,872	61,465	117,646	388,171	18,906	267,788	102,041	387,945	(100,966)	206,323	(15,605)
T035 - LS Power	(0)	999	4,338	3,994	(4,813)	(819)	(9,084)	(8,675)	(4,813)	(1,818)	(13,422)	(12,669)
T036 - NextEra Core 1	(0)	525	1,044	538	(2,590)	(390)	980	(6,724)	(2,590)	(915)	(64)	(7,261)
T037 - NextEra Core 2	(0)	142	1,399	(175)	(1,849)	(272)	(3,723)	(6,767)	(1,849)	(414)	(5,122)	(6,592)
T038 - NextEra Core 3	(0)	424	1,501	(420)	(2,058)	(419)	(3,318)	(7,522)	(2,058)	(843)	(4,819)	(7,102)
T039 - NextEra Core 4	(0)	553	2,072	677	(1,978)	(312)	(2,092)	(9,354)	(1,978)	(865)	(4,163)	(10,031)
T040 - NextEra Core 5	(0)	627	1,343	(130)	(2,331)	(469)	375	(7,697)	(2,331)	(1,096)	(968)	(7,567)
T041 - NextEra Core 6	(0)	696	1,534	(1,913)	(2,735)	(481)	1,825	(6,995)	(2,735)	(1,177)	291	(5,082)
T042 - NextEra Core 7	(0)	696	1,534	(1,913)	(2,735)	(481)	1,825	(6,995)	(2,735)	(1,177)	291	(5,082)
T043 - NextEra Enh 1	(0)	625	3,842	2,167	(3,073)	(524)	(9,922)	(8,276)	(3,073)	(1,149)	(13,764)	(10,443)
T044 - NextEra Enh 2	0	749	4,334	1,737	(1,740)	(428)	(12,303)	(9,267)	(1,740)	(1,177)	(16,636)	(11,004)
T047 - Propel Base 1	(0)	819	2,325	626	(2,956)	(586)	(7,496)	(8,006)	(2,956)	(1,405)	(9,821)	(8,632)
T048 - Propel Base 2	(0)	849	2,291	1,788	(2,714)	(593)	(3,690)	(8,214)	(2,714)	(1,442)	(5,981)	(10,003)
T049 - Propel Base 3	(0)	1,132	4,100	3,382	(4,511)	(785)	(11,641)	(9,391)	(4,511)	(1,917)	(15,741)	(12,773)
T051 - Propel Alt 5	(0)	735	2,537	1,439	(3,170)	(511)	(5,226)	(8,374)	(3,170)	(1,246)	(7,763)	(9,813)
T052 - Propel Alt 6	(0)	736	2,542	1,937	(3,371)	(578)	(5,191)	(8,258)	(3,371)	(1,314)	(7,732)	(10,195)
T053 - Propel Alt 7	0	913	2,697	1,592	(3,316)	(712)	(4,535)	(8,265)	(3,316)	(1,625)	(7,231)	(9,857)

Change In Import/Export (GWh)

Zonal Renewable Curtailment

Figure 17: Baseline Scenario 20-Year Zonal Curtailment Delta by Renewable Type (GWh)

Zone	Generation Type	T035 - LS Power	T036 - NextEra Core 1	T037 - NextEra Core 2	T038 - NextEra Core 3	T039 - NextEra Core 4	T040 - NextEra Core 5	T041 - NextEra Core 6	T042 - NextEra Core 7	T043 - NextEra Enh 1	T044 - NextEra Enh 2	T047 - Propel Base 1	T048 - Propel Base 2	T049 - Propel Base 3	T051 - Propel Alt 5	T052 - Propel Alt 6	T053 - Propel Alt 7
West	HYDRO	0	0	0	0	(0)	0	0	0	0	0	0	0	0	0	0	0
	LBW	1	1	1	1	0	1	1	1	1	(0)	1	1	1	1	1	1
	UPV	(0)	(1)	0	0	(3)	0	(0)	(0)	(0)	0	0	0	1	0	0	0
Genesee	HYDRO	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
	LBW	(0)	(0)	(0)	(0)	(0)	(0)	(1)	(1)	(1)	(1)	(0)	(0)	(1)	(0)	(0)	(0)
	UPV	3	(3)	2	2	(13)	2	(1)	(1)	(2)	(10)	2	1	(1)	1	1	2
Central	HYDRO	(0)	(0)	(0)	(0)	1	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	LBW	2	4	5	4	3	2	3	3	4	5	1	2	(3)	2	2	1
	UPV	0	(2)	0	0	(7)	0	(0)	(0)	(0)	1	0	0	0	0	0	0
North	HQ IMP	432	600	691	695	653	603	606	606	664	657	432	440	447	438	462	470
	HYDRO	20	23	28	28	28	26	26	26	27	26	20	19	19	20	21	22
	LBW	43	70	81	84	81	73	71	71	77	70	58	45	41	46	43	44
Mohawk Valley	UPV	0	(0)	0	0	(2)	0	(0)	(0)	0	0	0	0	0	0	0	0
	HYDRO	1	2	1	1	0	2	1	1	(1)	(2)	0	1	(0)	1	(0)	1
	LBW	38	55	65	67	66	53	52	52	63	53	40	40	29	42	44	42
Capital	UPV	4	(1)	1	1	(7)	0	(0)	(0)	4	3	2	3	3	2	4	3
	HYDRO	23	26	27	25	26	25	27	27	27	27	23	24	23	23	26	26
	UPV	3	6	5	5	(7)	5	5	5	(3)	(23)	5	5	3	5	4	7
Hudson Valley	HYDRO	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	UPV	2	1	2	2	(4)	1	1	1	(5)	(7)	3	2	1	2	1	1
Long Island	NY City	130	(216)	(396)	(397)	(139)	(215)	(214)	(214)	(280)	(302)	123	132	94	116	96	96
	OSW	(5,306)	(5,282)	(5,285)	(5,289)	(5,275)	(5,282)	(5,286)	(5,286)	(5,304)	(5,309)	(5,285)	(5,287)	(5,285)	(5,296)	(5,294)	(5,291)
	UPV	(181)	(180)	(179)	(180)	(180)	(179)	(181)	(181)	(181)	(181)	(180)	(180)	(180)	(181)	(181)	(181)

Figure 18: Policy Scenario 20-Year Zonal Curtailment Delta by Renewable Type (GWh)

Zone	Generation Type	T035 - LS Power	T036 - NextEra Core 1	T037 - NextEra Core 2	T038 - NextEra Core 3	T039 - NextEra Core 4	T040 - NextEra Core 5	T041 - NextEra Core 6	T042 - NextEra Core 7	T043 - NextEra Enh 1	T044 - NextEra Enh 2	T047 - Propel Base 1	T048 - Propel Base 2	T049 - Propel Base 3	T051 - Propel Alt 5	T052 - Propel Alt 6	T053 - Propel Alt 7
West	HYDRO	1,173	1,149	1,192	1,247	1,195	1,209	1,212	1,212	1,301	1,041	1,197	1,128	1,267	1,200	1,200	1,170
	LBW	252	307	324	327	294	328	298	298	354	457	250	244	265	271	300	293
	UPV	123	153	229	226	116	140	130	130	161	104	65	110	49	119	127	129
Genesee	HYDRO	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0
	LBW	96	108	108	96	144	112	104	104	125	145	88	83	101	110	117	110
	UPV	130	173	183	178	95	140	170	170	61	52	147	110	131	145	191	155
Central	HYDRO	55	61	59	64	66	59	59	59	55	50	62	53	61	61	62	60
	LBW	70	107	92	111	50	90	111	111	11	(199)	44	20	32	72	99	88
	UPV	517	539	518	473	486	516	560	560	453	321	574	459	552	544	570	514
North	HQ IMP	1,115	1,235	1,327	1,384	1,292	1,398	1,233	1,233	1,096	449	1,229	925	1,327	1,296	1,310	1,320
	HYDRO	808	850	803	908	858	901	882	882	745	413	798	702	814	858	889	928
	LBW	272	332	294	319	326	345	385	385	256	119	316	245	316	325	326	349
Mohawk Valley	UPV	109	89	68	78	140	88	102	102	82	34	89	68	95	94	92	95
	HYDRO	227	246	222	220	215	237	257	257	222	144	259	203	271	257	249	254
	LBW	1,413	1,509	1,502	1,632	1,589	1,556	1,593	1,593	1,582	1,370	1,427	1,020	1,429	1,530	1,578	1,594
Capital	UPV	845	828	805	848	1,050	884	911	911	777	629	923	807	889	887	912	891
	HYDRO	351	352	365	382	371	378	344	344	394	304	394	335	389	347	390	387
	LBW	693	723	688	780	731	769	778	778	750	721	655	469	678	764	772	769
Hudson Valley	UPV	1,737	1,780	1,696	1,813	1,932	1,815	3,409	3,409	1,775	2,998	2,112	1,498	1,794	3,021	1,885	1,862
	HYDRO	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	LBW	520	545	535	573	554	561	571	571	561	564	506	399	523	560	568	569
Long Island	UPV	192	194	181	191	202	198	176	176	211	193	185	167	197	182	209	208
	NY City	262	289	292	306	310	298	315	315	306	285	262	177	272	304	299	307
	OSW	(27,439)	(29,042)	(28,799)	(30,494)	(30,326)	(30,083)	(30,467)	(30,467)	(31,531)	(31,534)	(29,227)	(25,419)	(29,453)	(30,640)	(30,681)	(30,305)
Long Island	UPV	(539)	(500)	(506)	(502)	(485)	(498)	(505)	(505)	(590)	(590)	(472)	(406)	(465)	(510)	(499)	(496)

Figure 19: Policy + B-VS Scenario 20-Year Zonal Curtailment Delta by Renewable Type (GWh)

Zone	Generation Type	T035 - LS Power	T036 - NextEra Core 1	T037 - NextEra Core 2	T038 - NextEra Core 3	T039 - NextEra Core 4	T040 - NextEra Core 5	T041 - NextEra Core 6	T042 - NextEra Core 7	T043 - NextEra Enh 1	T044 - NextEra Enh 2	T047 - Propel Base 1	T048 - Propel Base 2	T049 - Propel Base 3	T051 - Propel Alt 5	T052 - Propel Alt 6	T053 - Propel Alt 7
West	HYDRO	1,338	682	775	874	685	765	767	767	1,014	869	995	959	1,326	975	1,100	987
	LBW	293	210	239	202	244	220	217	217	318	433	249	243	310	276	278	273
	UPV	166	152	208	188	142	139	152	152	185	153	63	126	102	140	153	138
Genesee	HYDRO	0	1	0	0	1	0	1	1	0	0	0	0	0	(0)	1	0
	LBW	125	61	55	70	104	74	80	80	132	121	89	93	115	85	98	89
	UPV	259	122	187	187	65	158	160	160	138	106	176	183	226	172	231	196
Central	HYDRO	324	140	175	192	167	166	177	177	247	176	223	213	324	256	262	227
	LBW	392	137	294	166	(132)	229	8	8	(41)	(1,545)	(213)	(70)	(277)	(98)	20	63
	UPV	2,662	1,738	1,659	1,397	1,623	1,717	1,999	1,999	2,108	1,468	2,071	2,105	2,760	2,188	2,328	2,232
North	HQ IMP	1,707	433	467	567	454	489	446	446	1,037	(198)	840	714	1,597	847	966	939
	HYDRO	1,083	428	364	442	430	432	452	452	716	139	580	541	990	708	675	713
	LBW	406	172	108	114	165	146	211	211	276	(5)	240	123	402	236	224	240
Mohawk Valley	UPV	115	37	46	17	103	36	37	37	64	(3)	70	47	93	68	53	65
	HYDRO	313	114	110	121	111	117	138	138	212	96	222	191	332	211	222	219
	LBW	1,371	800	813	905	902	851	867	867	1,166	915	750	725	1,049	967	1,075	1,096
Capital	UPV	932	592	671	649	778	711	698	698	876	584	792	644	935	838	776	825
	HYDRO	447	191	199	221	207	220	184	184	356	222	301	268	443	278	312	312
	LBW	702	345	336	389	334	388	401	401	501	431	318	296	519	455	474	493
Hudson Valley	UPV	1,845	1,052	1,089	1,217	1,224	1,163	2,757	2,757	1,465	2,696	1,552	1,156	1,638	2,603	1,500	1,476
	HYDRO	4	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2
	LBW	538	294	308	343	304	323	326	326	418	399	299	304	423	384	410	417
City	UPV	202	117	110	129	121	132	106	106	166	155	120	125	175	128	166	166
	OSW	253	106	100	116	116	121	130	130	182	192	117	92	196	167	161	170
Long Island	OSW	(55,377)	(20,185)	(21,363)	(23,601)	(22,123)	(21,799)	(23,254)	(23,254)	(41,403)	(34,029)	(34,728)	(31,337)	(54,330)	(38,354)	(38,326)	(37,727)
	UPV	(348)	(369)	(357)	(348)	(347)	(351)	(351)	(351)	(417)	(432)	(252)	(285)	(213)	(323)	(316)	(323)

S₀₂ Emissions

Figure 20: Baseline Scenario S₀₂ Emissions

20-Year Estimated S ₀₂ Emissions (1,000 Tons)				
Project	LI	NYC	NYCA	Regional
Baseline Case (Pre-Project)	2	1	10	10,693
T035 - LS Power	2	1	10	10,688
T036 - NextEra Core 1	2	1	10	10,684
T037 - NextEra Core 2	2	1	10	10,685
T038 - NextEra Core 3	2	1	10	10,689
T039 - NextEra Core 4	2	1	10	10,686
T040 - NextEra Core 5	2	1	10	10,683
T041 - NextEra Core 6	2	1	10	10,691
T042 - NextEra Core 7	2	1	10	10,691
T043 - NextEra Enh 1	2	1	10	10,696
T044 - NextEra Enh 2	2	1	10	10,691
T047 - Propel Base 1	2	1	10	10,687
T048 - Propel Base 2	2	1	10	10,690
T049 - Propel Base 3	2	1	10	10,685
T051 - Propel Alt 5	2	1	10	10,688
T052 - Propel Alt 6	2	1	10	10,688
T053 - Propel Alt 7	2	1	10	10,684

Figure 21: Policy Scenario S₀₂ Emissions

20-Year Estimated S ₀₂ Emissions (1,000 Tons)				
Project	LI	NYC	NYCA	Regional
Policy Case (Pre-Project)	1	0	5	10,676
T035 - LS Power	1	0	5	10,659
T036 - NextEra Core 1	1	0	5	10,653
T037 - NextEra Core 2	1	0	5	10,652
T038 - NextEra Core 3	1	0	5	10,654
T039 - NextEra Core 4	1	0	5	10,653
T040 - NextEra Core 5	1	0	5	10,659
T041 - NextEra Core 6	1	0	5	10,652
T042 - NextEra Core 7	1	0	5	10,652
T043 - NextEra Enh 1	1	0	5	10,653
T044 - NextEra Enh 2	1	0	5	10,662
T047 - Propel Base 1	1	0	5	10,648
T048 - Propel Base 2	1	0	5	10,659
T049 - Propel Base 3	1	0	5	10,648
T051 - Propel Alt 5	1	0	5	10,657
T052 - Propel Alt 6	1	0	5	10,655
T053 - Propel Alt 7	1	0	5	10,661

Figure 22: Policy + B-VS Scenario SO₂ Emissions

20-Year Estimated SO ₂ Emissions (1,000 Tons)				
Project	LI	NYC	NYCA	Regional
Policy + B-VS (Pre-Project)	1	0	5	10,678
T035 - LS Power	1	0	5	10,659
T036 - NextEra Core 1	1	0	5	10,659
T037 - NextEra Core 2	1	0	5	10,655
T038 - NextEra Core 3	1	0	5	10,660
T039 - NextEra Core 4	1	0	5	10,656
T040 - NextEra Core 5	1	0	5	10,663
T041 - NextEra Core 6	1	0	5	10,652
T042 - NextEra Core 7	1	0	5	10,652
T043 - NextEra Enh 1	1	0	5	10,658
T044 - NextEra Enh 2	1	0	5	10,664
T047 - Propel Base 1	1	0	5	10,647
T048 - Propel Base 2	1	0	5	10,661
T049 - Propel Base 3	1	0	5	10,649
T051 - Propel Alt 5	1	0	5	10,663
T052 - Propel Alt 6	1	0	5	10,660
T053 - Propel Alt 7	1	0	5	10,661

NO_x Emissions

Figure 23: Baseline Scenario NO_x Emissions

20-Year Estimated NO _x Emissions (1,000 Tons)				
Project	LI	NYC	NYCA	Regional
Baseline Case (Pre-Project)	48	42	182	6,741
T035 - LS Power	46	43	183	6,742
T036 - NextEra Core 1	46	43	182	6,741
T037 - NextEra Core 2	46	43	182	6,740
T038 - NextEra Core 3	46	43	182	6,741
T039 - NextEra Core 4	46	46	183	6,741
T040 - NextEra Core 5	46	44	182	6,739
T041 - NextEra Core 6	46	43	182	6,742
T042 - NextEra Core 7	46	43	182	6,742
T043 - NextEra Enh 1	46	44	182	6,743
T044 - NextEra Enh 2	46	45	182	6,742
T047 - Propel Base 1	46	43	182	6,741
T048 - Propel Base 2	46	44	183	6,740
T049 - Propel Base 3	46	44	183	6,740
T051 - Propel Alt 5	46	44	183	6,740
T052 - Propel Alt 6	46	44	182	6,740
T053 - Propel Alt 7	46	44	183	6,740

Figure 24: Policy Scenario NO_x Emissions

20-Year Estimated NO _x Emissions (1,000 Tons)				
Project	LI	NYC	NYCA	Regional
Policy Case (Pre-Project)	22	7	61	6,681
T035 - LS Power	21	7	60	6,680
T036 - NextEra Core 1	21	7	60	6,680
T037 - NextEra Core 2	21	7	60	6,680
T038 - NextEra Core 3	21	7	60	6,681
T039 - NextEra Core 4	21	7	60	6,678
T040 - NextEra Core 5	21	7	60	6,681
T041 - NextEra Core 6	21	7	60	6,680
T042 - NextEra Core 7	21	7	60	6,680
T043 - NextEra Enh 1	21	7	60	6,679
T044 - NextEra Enh 2	21	7	60	6,679
T047 - Propel Base 1	21	7	60	6,675
T048 - Propel Base 2	21	7	60	6,680
T049 - Propel Base 3	21	7	60	6,675
T051 - Propel Alt 5	21	7	60	6,681
T052 - Propel Alt 6	21	7	60	6,680
T053 - Propel Alt 7	21	7	60	6,680

Figure 25: Policy + B-VS Scenario NO_x Emissions

Project	LI	NYC	NYCA	Regional
Policy + B-VS (Pre-Project)	22	7	61	6,684
T035 - LS Power	21	7	60	6,680
T036 - NextEra Core 1	21	7	60	6,684
T037 - NextEra Core 2	21	7	60	6,682
T038 - NextEra Core 3	21	7	60	6,683
T039 - NextEra Core 4	21	7	60	6,680
T040 - NextEra Core 5	21	7	60	6,684
T041 - NextEra Core 6	21	7	60	6,682
T042 - NextEra Core 7	21	7	60	6,682
T043 - NextEra Enh 1	21	7	60	6,680
T044 - NextEra Enh 2	21	7	60	6,681
T047 - Propel Base 1	21	7	60	6,677
T048 - Propel Base 2	21	7	60	6,680
T049 - Propel Base 3	21	7	60	6,676
T051 - Propel Alt 5	21	7	60	6,682
T052 - Propel Alt 6	21	7	60	6,681
T053 - Propel Alt 7	21	7	60	6,682

Transmission Constraint Summary

Figure 26: Baseline Scenario 2040 Long Island Constraints

Contingency Name	Limiting Line	Limiting Hours
PAR,NRTHPT1 -NRTHPT P - 1	NORTHPORT P 138 - NORTHPORT1 138	3,970
P5_EGC_138_M -VLYSTRM	SPRAINBROOK 345 - EAST GARDEN CITY 345 1	2,684
P5_EGC_138_M	DUNWOODIE 345 - SHORE ROAD 345 1	2,401
E.G.C. 138 NEWBRGE 138 1	DUNWOODIE 345 - SHORE ROAD 345 1	1,775
DUNWODIE 345 SHORE_RD 345 1	EAST GARDEN CITY 138 - NEWBRIDGE 138 1	1,172
SB:SPRA345_RN2	VALLEY STREAM 138 - VALLEY STREAM P 138	1,074
2-TRIPS,CARLA PL-E.G.C. - 1	CARLE PLACE 138 - EAST GARDEN CITY 138	1,044
P5_EGC_138_M - NEWBRG 69	JAMAICA 138.00-VALLEY STREAM P 138.00	963
1-TRIPS,CARLA PL-E.G.C. - 1	CARLE PLACE 138 - EAST GARDEN CITY 138	689
2-TRIPS,CARLE PL-E.G.C. - 1	CARLE PLACE 138 - EAST GARDEN CITY 138	645
24 :EGC 1360 - CARLEGC	CARLE PLACE 138 - EAST GARDEN CITY 138	589
SPRNBRK 345 EGRDNCTR 345 1	NEWBRIDGE 138 - NEWBRIDGE2 69	385
3-TRIPS,HOLBROOK-HOLBRK2 - 2	HOLBROOK 138 - HOLBROOK2 69	99

Figure 27: Policy Scenario 2040 Long Island Constraints

Contingency Name	Limiting Line	Limiting Hours
1-TRIPS,CARLA PL-E.G.C. - 1	SPRAINBROOK 345 - EAST GARDEN CITY 345 1	5,034
T-BUS,VLY S-E.G.	CARLE PLACE 138 - EAST GARDEN CITY 138	3,389
SPRNBRK 345 EGRDNCTR 345 1	VALLEY STREAM 138 - EAST GARDEN CITY 138	2,699
3-TRIPS,HOLBAOOK-HOLBRK2 - 2	HOLBROOK 138 - HOLBROOK2 69	2,252
7-TRIPS,KINGS -PILGRIM - 1	NORTHPORT P 138 - NORTHPORT1 138	1,618
3-TRIPS,PT JEFF1-PT JEFF3- 1	PILGRM P 138 - HAUPAGUE 138	1,573
6-TRIPS,RULND RD-STERLING- 1	DUNWOODIE 345 - SHORE ROAD 345 1	1,477
NNC L/O 398	RULAND ROAD 138 - STERLING 138	688
871 L/O T:881&882	PORT JEFFERSON1 138 - PORT JEFFERSON3 138	594
DUNWODIE 345 SHORE_RD 345 1	KINGS 138 - PILGRIM 138	121

Figure 28: Policy + B-VS Scenario 2040 Long Island Constraints

Contingency Name	Limiting Line	Limiting Hours
1-TRIPS,CARLA PL-E.G.C. - 1	BARRETT2 138 - VALLEY STREAM 138	5,223
1-TRIPS,BARRETT2-VLY STRM- 2	SPRAINBROOK 345 - EAST GARDEN CITY 345 1	4,638
T-BUS,VLY S-E.G.	CARLE PLACE 138 - EAST GARDEN CITY 138	2,908
3-TRIPS,HOLBAOOK-HOLBRK2 - 2	VALLEY STREAM 138 - EAST GARDEN CITY-2 138	2,811
SPRNBRK 345 EGRDNCTR 345 1	NORTHPORT1 138 - NORTHPORT2 138	2,219
98 :HOL 1370	HOLBROOK 138 - HOLBROOK2 69	2,194
7-TRIPS,KINGS -PILGRIM - 1	NORTHPORT P 138 - NORTHPORT1 138	1,617
3-TRIPS,PT JEFF1-PT JEFF3- 1	DUNWOODIE 345 - SHORE ROAD 345 1	1,413
NNC L/O 398	LAKE SUCCESS 138 - SHORE ROAD 138	1,367
871 L/O T:881&882	PILGRM P 138 - HAUPAGUE 138	1,290
3-TRIPS,HOLBROOK-HOLBRK2 - 2	DUNWOODIE 345 - SHORE ROAD 345 1	1,128
6-TRIPS,RULND RD-STERLING- 1	RULAND ROAD 138 - STERLING 138	726
1-TRIPS,L SUCS -SHORE RD- 1	PORT JEFFERSON1 138 - PORT JEFFERSON3 138	598
80 :RUL 1410	HOLBROOK 138.00-HOLBRK2 69.00	516
DUNWODIE 345 SHORE_RD 345 1	KINGS 138 - PILGRIM 138	405
SB:SPRA345_RN2	HOLBROOK 138 - HOLBROOK2 69	239
1-TRIPS,NRTHPRT1-NRTHPRT2- 1	KINGS 138 - PILGRIM 138	119

Long Island Net-Load Variability Sensitivity

As offshore wind generation projects are interconnected to Long Island, the need to maintain flexible resources to balance minute-to-minute energy variability in the area will increase. Variability can come from several sources such as real-time changes in electrical demand and output of both behind-the-meter and utility-scale solar photovoltaic resources connected to the Long Island system. In today's system, any unforeseen generation resource availability in Long Island is accommodated through a combination of reserves and a transmission constraint margin. Long Island does not currently have a specific regulation or spinning reserve requirement but shares a multi-zonal requirement with other NYISO zones.

To calculate transmission security margins for use in this sensitivity, the NYISO performed a statistical analysis using the hourly offshore wind, solar, and load patterns from the production cost models. Assuming a normal distribution, the statistical probability of exceedance values of hour-to-hour changes in net load (load minus solar minus wind), which are used to set the Long Island transmission constraint margin, are shown in the figure below.

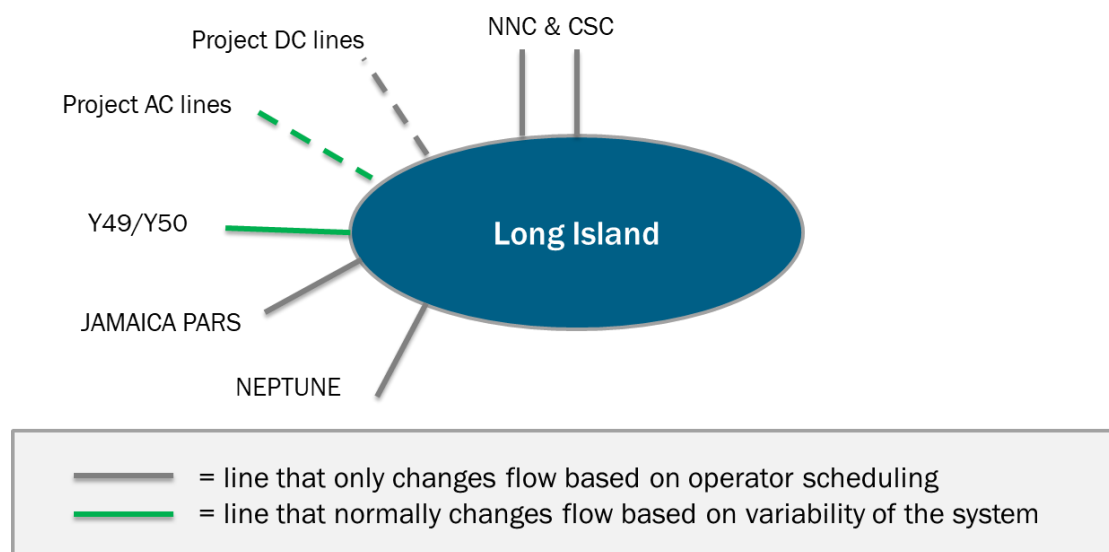
Figure 29: Long Island Constraint Reliability Margin Calculation Results

Year	LI Reliability Margin (MW)		
	P90	P95	P99
2030	314	407	614
2035	417	544	788
2040	623	815	1,228
2045	664	864	1,289

To estimate the impact of the reliability margin on the proposed projects, the P95 value was modeled in the Policy + B-VS Scenario in both the pre-project case and for each of the top-tier projects. It is important to note that production cost simulations are performed with "all lines in-service" and do not capture pre-contingency outages. If a transmission outage on a Long Island tie line were to be modeled pre-contingency, both offshore wind curtailment and project production cost savings would increase.

The margin value was divided by the number of transmission ties between Long Island and other areas that can support variability. This value is then subtracted from the thermal limit of each line. In the pre-project case, there are only two tie-lines that can support variability in Long Island, which are the Y49 and Y50 transmission lines. Proposed projects add between zero and three new tie lines that can support variable flows. The diagram below conceptually shows current and proposed tie lines.

Figure 30: Long Island Tie-Line Diagram



Results from the Policy + B-VS Scenario production cost simulations modeling the P95 reliability margins are shown in the figures below.

Figure 31: Long Island Offshore Wind Curtailment (TWh) in Variability Sensitivity

Project	20-Year LI OSW Curtailment (TWh)	
	Policy + B-VS	Policy + B-VS P95
Pre-Project	59.48	66.90
T035 - LS Power	4.10	5.27
T036 - NextEra Core 1	39.29	39.37
T040 - NextEra Core 5	37.68	37.58
T048 - Propel Base 2	28.14	31.82
T049 - Propel Base 3	5.15	8.05
T051 - Propel Alt 5	21.12	21.21
T052 - Propel Alt 6	21.15	21.30

Figure 32: Production Cost Savings (2022 \$M) in Variability Sensitivity

Project	20-Year Production Cost Savings (2022 \$M)	
	Policy + Barrett-VS	Policy + B-VS P95
T035 - LS Power	\$906	\$1,227
T036 - NextEra Core 1	\$291	\$634
T040 - NextEra Core 5	\$332	\$680
T048 - Propel Base 2	\$513	\$817
T049 - Propel Base 3	\$902	\$1,225
T051 - Propel Alt 5	\$609	\$956
T052 - Propel Alt 6	\$618	\$963

Appendix M: Capacity Benefits LOLE Reduction

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



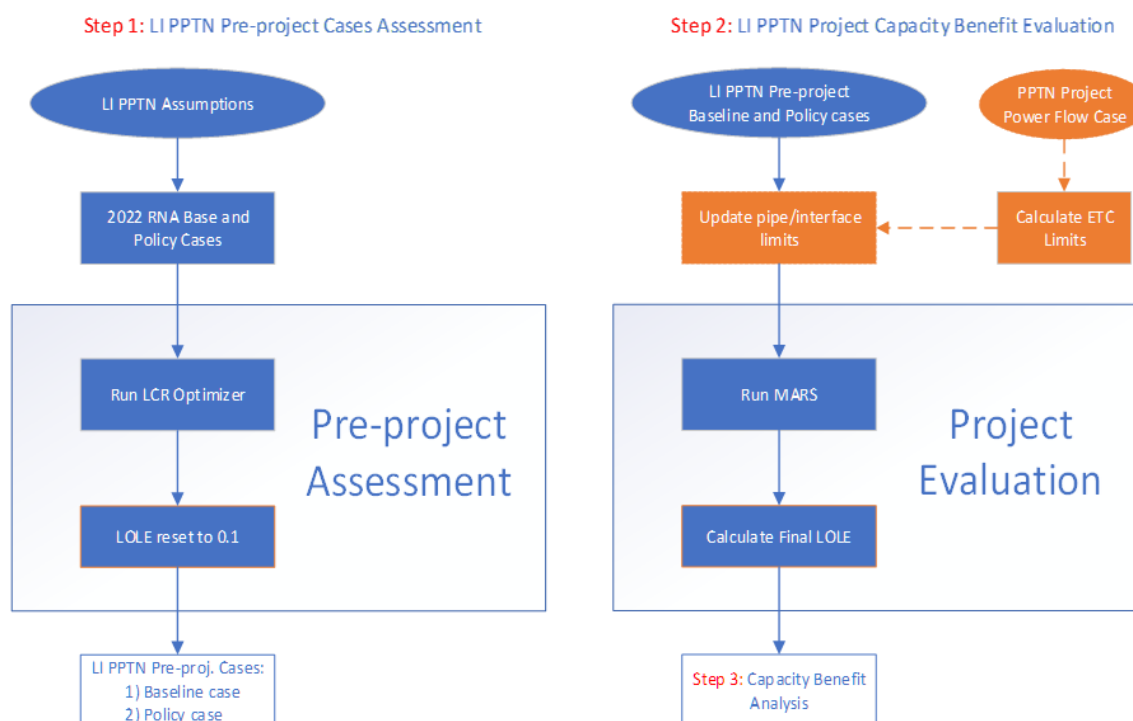
Appendix M: Capacity Benefits LOLE Reduction

Overview of Methodology

The capacity benefit metric evaluates the incremental capacity benefits created by each proposed project. The methodology compares the pre- and post-project system resource adequacy to identify the reduction in the NYCA loss of load expectation (LOLE).¹ A greater reduction in the NYCA LOLE, compared to the pre-project case, indicates greater capacity benefits created by a proposed project.

The methodology is comprised of three major steps, as illustrated in Figure 1. The first step evaluates and resets the NYCA LOLE of the pre-project Reliability Needs Assessment (RNA) base and policy cases (MARS cases) to criteria (i.e., 0.1 event-days per year) using NYISO's LCR Optimizer. The second step models transmission changes specific to a project by adding new interzonal pipes and updating the Emergency Transfer Criteria (ETC) limits of the associated interfaces. MARS is then run on the modified RNA cases with the project to evaluate the change in NYCA LOLE. The third and final step involves calculating the annual capacity benefit of a project by applying a cost of reliability improvement (CRI) (\$/0.001 LOLE) to the change in NYCA LOLE brought by each project.

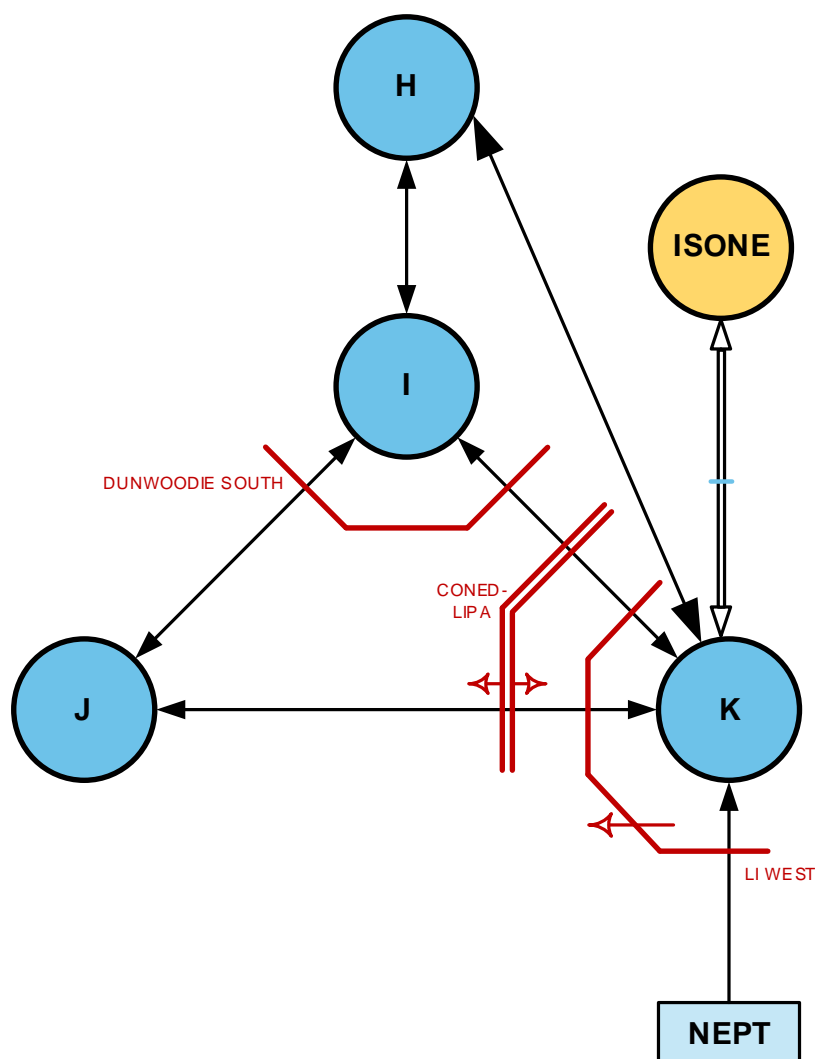
Figure 1: Capacity Benefits Evaluation Process



¹ The New York State bulk power system is planned to meet a LOLE that, at any given point in time, is less than or equal to an involuntary firm load disconnection that is not more frequent than once in every 10 years, or 0.1 events per year.

Thermal transfer limit analysis was performed using PowerGEM TARA, based on DC (linear) power flow, which assumes that voltages, reactive flows, or losses do not change with increased transfer levels. Emergency transfer limits of affected MARS topology interfaces were calculated with and without each project to determine the incremental impact transfer limits due to the addition of each project, as shown in the Figure 2.

Figure 2: Affected MARS Topology Interfaces



In accordance with NPCC criteria and NYSRC reliability rules, the contingency list was modified to include each project's related contingencies. Phase angle regulators maintained scheduled power flow in pre-contingency conditions but were fixed at their pre-contingency angle in post-contingency conditions. HVDC facilities maintained scheduled power flow in pre-contingency conditions but were fixed post-contingency conditions.

An emergency interface transfer limit is the transfer level where a) a branch flow reaches its normal rating under pre-contingency conditions or b) a branch flow reaches its short-term emergency (STE) rating following a single-line, multi-element, or generator outage. Affected MARS topology transfer limits for Export and Import are shown in Figure 3 and Figure 4, respectively.

Figure 3: Post-Project Emergency Transfer Limits (MW): Export

Project	K TO H	LIPA-ConEd	LI West	K TO NE	K TO I	K TO J	J TO I	J-I & K-I
Pre-Project	0	190	104	414	515	505	1999	99999
T035-LS Power	3575	190	104	414	515	505	1999	99999
T036-NextEra Core 1	0	3090	3004	414	3090	805	1999	99999
T037-NextEra Core 2	0	3665	3579	414	2915	1555	1999	99999
T038-NextEra Core 3	0	3940	3854	414	3290	1480	1999	99999
T039-NextEra Core 4	0	3265	3179	414	3490	580	1999	99999
T040-NextEra Core 5	0	4240	4154	414	4465	580	1999	99999
T041-NextEra Core 6	0	3615	3529	414	3790	630	1999	99999
T042-NextEra Core 7	0	3615	3529	414	3790	630	1999	99999
T043-NextEra Enh1	1200	4915	4829	414	3940	1130	1999	99999
T043-NextEra Enh 2	0	4915	4829	414	3940	1130	1999	99999
T047-Propel Base 1	0	2065	1979	414	1690	1205	1999	99999
T048-Propel Base 2	0	1815	1729	414	1340	1280	1999	99999
T049-Propel Base 3	0	2115	2029	414	1740	1205	1999	99999
T051-Propel Alt 5	0	2915	2829	414	2540	1205	1999	99999
T052-Propel Alt 6	0	3815	3729	414	3365	1255	1999	99999
T053-Propel Alt 7	0	3840	3754	414	3415	1255	1999	99999

Figure 4: Post-Project Emergency Transfer Limits (MW): Import

Project	DunSouth (I-J&I-K)	I TO J	H TO K	ConEd-LIPA	LI West Reverse	NE TO K	I TO K	J TO K
Pre-Project	5693	4400	0	1613	999999	404	1293	320
T035 - LS Power	5693	4400	3550	1613	999999	404	1293	320
T036 - NextEra Core 1	7768	4400	0	3763	999999	404	3443	320
T037 - NextEra Core 2	7993	4400	0	3763	999999	404	3343	545
T038 - NextEra Core 3	7993	4400	0	3738	999999	404	3743	895
T039 - NextEra Core 4	6143	4400	0	3588	999999	404	3268	320
T040 - NextEra Core 5	7718	4400	0	3663	999999	404	3343	320
T041 - NextEra Core 6	7493	4400	0	4638	999999	404	4343	320
T042 - NextEra Core 7	7493	4400	0	4638	999999	404	4343	320
T043 - NextEra Enh 1	6718	4400	1200	3188	999999	404	4043	595
T043 - NextEra Enh 2	6718	4400	0	3188	999999	404	4043	595
T047 - Propel Base 1	6393	4400	0	3013	999999	404	1993	1020
T048 - Propel Base 2	6393	4400	0	3013	999999	404	1993	1020
T049 - Propel Base 3	6393	4400	0	3013	999999	404	1993	1020
T051 - Propel Alt 5	7093	4400	0	3738	999999	404	2693	1020
T052 - Propel Alt 6	7793	4400	0	3788	999999	404	3293	470
T053 - Propel Alt 7	7118	4400	0	3613	999999	404	3118	495

Capacity benefits can be theoretically evaluated by comparing the capacity procurement requirement

in the downstate area before and after each of the proposed solutions to the Long Island Offshore Wind Export Public Policy Transmission Need are in service. Currently, the NYISO determines the capacity procurement requirements for the downstate area through the Locational Capacity Requirements (LCR) process. The methodology and assumptions used in the LCR process via the LCR Optimizer are based on current system and market configurations, as well as near-term economic conditions. They include, but are not limited to, the limitations on the NYCA topology and Net Cost of New Entry (CONE) for new technologies. Based on the NYISO's past experience, the outcomes from the LCR Optimizer are sensitive to small changes in any of these assumptions.

In developing the methodology for calculating the capacity benefits based on LOLE reduction, the NYISO staff considered but decided against using the LCR process directly to evaluate capacity benefits of proposed solutions to the Long Island PPTN. First, the assumptions used in the LCR Optimizer, as discussed above, are expected to go through significant changes in the next decade. The NYISO is also planning to explore enhancements to the LCR Optimizer in 2023. Assessment with the current LCR Optimizer might introduce unnecessary volatility in the evaluation outcomes. Second, applying the LCR Optimizer directly to evaluate each project would require significant efforts and computing time to develop and test different combinations of future system, economic and market assumptions. Based on the foregoing, the NYISO focused on methodologies other than the LCR process to directly evaluate capacity benefits for the purpose of its comparative evaluation.

However, the current LCR Optimizer provides a methodology in bringing a MARS database to meet the 0.1 event-days/year LOLE criterion. This will be discussed further in the following section.

LOLE Calculation Assumptions and Results

Pre-Project

To establish a reference point for post-project NYCA LOLE impact comparison, the NYISO developed two pre-project models—both based on the MARS models developed under the 2022 Reliability Need Assessment² study process for study year 2030:

1. The 2022 Reliability Need Assessment (RNA) Base Case for study year 2030 was further updated to reflect offshore wind targets (Figure 5) and also to remove the proposed Champlain Hudson Power Express (CHPE) HVDC transmission project (Figure 6).
2. The 2022 Reliability Need Assessment (RNA) Policy Case Scenario 2 was further updated to

² Additional RNA details are available at the links below:

2022 RNA Report: <https://www.nyiso.com/documents/20142/2248793/2022-RNA-Report.pdf>

2022 RNA Appendices: <https://www.nyiso.com/documents/20142/34651464/2022-RNA-Appendices.pdf>

reflect offshore wind targets (Figure 5). Both CHPE and the proposed Clean Path New York (CPNY) HVDC transmission projects continue to be modeled in this case (Figure 6).

Figure 5: Offshore Wind Capacity Assumptions (MW)

	Baseline	Policy Case
Zone K Total	2,279	2,539
Zone J Total	2,046	2,046

Figure 6: Tier 4 Proposed HVDC Project Assumptions

Tier 4 Projects	Baseline	Policy Case
CHPE	Remove	Retain
CPNY	Not modeled	Retain

Each of the two models were developed to reflect the expected system conditions of a specific planning study year and scenario and have much lower LOLE than the 0.1 event-days/year LOLE criterion. In order to have visible LOLE improvements to facilitate the evaluation, the NYISO applied the current LCR Optimizer and inputs used in the 2021 LCR study, adjusting these two models to meet the LOLE criterion of 0.1 event-days/year. With the adjustments, each of these two models became the reference point for the post-project NYCA LOLE impact. Better performance under this metric is represented by greater decreases in LOLE from 0.1 event-days/year reference, as lower NYCA LOLE means a more reliable system from resource adequacy perspective.

Post-Project

Starting from the two pre-project MARS models at-criterion described above, two models were developed for each of the projects, by reflecting their impacts on the affected MARS topology transfer limits, and as shown in the Figure 3 and Figure 4 above.

The NYCA LOLE results are summarized in Figure 7 below.

Figure 7: NYCA LOLE Results


LI PPTN Delta NYCA LOLE (event-day/year) on Study Year 2030				
Projects	Baseline	Policy	Delta	
			Baseline	Policy
Pre-Project	0.01383	0.00708		
Pre-Project at Criteria	0.10008	0.10047		
T035 - LS Power	0.07430	0.07413	-0.02578	-0.02634
T036 - NextEra Core 1	0.08012	0.07848	-0.01996	-0.02199
T037 - NextEra Core 2	0.06279	0.06157	-0.03729	-0.03890
T038 - NextEra Core 3	0.05754	0.05393	-0.04254	-0.04654
T039 - NextEra Core 4	0.08854	0.08876	-0.01154	-0.01171
T040 - NextEra Core 5	0.08854	0.08876	-0.01154	-0.01171
T041 - NextEra Core 6	0.08672	0.08655	-0.01336	-0.01392
T042 - NextEra Core 7	0.08672	0.08655	-0.01336	-0.01392
T043 - NextEra Enh 1	0.05627	0.05231	-0.04381	-0.04816
T044 - NextEra Enh 2	0.06311	0.05811	-0.03697	-0.04236
T047 - Propel Base 1	0.05789	0.05533	-0.04219	-0.04514
T048 - Propel Base 2	0.05786	0.05513	-0.04222	-0.04534
T049 - Propel Base 3	0.05789	0.05533	-0.04219	-0.04514
T051 - Propel Alt 5	0.05770	0.05498	-0.04238	-0.04549
T052 - Propel Alt 6	0.06717	0.06251	-0.03291	-0.03796
T053 - Propel Alt 7	0.06601	0.06166	-0.03407	-0.03881

Cost of Reliability Improvement

The monetary value of capacity benefits is measured by how each project affects LOLE and the Cost of Reliability Improvement (CRI). CRI represents the compensation that a generator would receive in the capacity market for providing comparable LOLE benefits. Based on the Net CONE values of the current capacity demand curves and the estimated reliability benefit from additional capacity, it is estimated that a generator would receive \$2.5 million per 0.001 change in LOLE per year. In the figure below, the Delta LOLE results of each project are multiplied by the \$2.5M CRI value to provide an annual capacity benefit of each project.

Figure 8: NYCA Delta LOLE Results and Annual Capacity Benefits

LI PPTN Delta NYCA LOLE (event-day/year) on Study Year 2030						
Projects			Delta		Annual Capacity Benefit (2022 \$M)	
	Baseline	Policy	Baseline	Policy	Baseline	Policy
Pre-Project	0.01383	0.00708				
Pre-Project at Criteria	0.10008	0.10047				
T035 - LS Power	0.07430	0.07413	-0.02578	-0.02634	\$ 64.45	\$ 65.85
T036 - NextEra Core 1	0.08012	0.07848	-0.01996	-0.02199	\$ 49.90	\$ 54.98
T037 - NextEra Core 2	0.06279	0.06157	-0.03729	-0.03890	\$ 93.23	\$ 97.25
T038 - NextEra Core 3	0.05754	0.05393	-0.04254	-0.04654	\$106.35	\$116.35
T039 - NextEra Core 4	0.08854	0.08876	-0.01154	-0.01171	\$ 28.85	\$ 29.28
T040 - NextEra Core 5	0.08854	0.08876	-0.01154	-0.01171	\$ 28.85	\$ 29.28
T041 - NextEra Core 6	0.08672	0.08655	-0.01336	-0.01392	\$ 33.40	\$ 34.80
T042 - NextEra Core 7	0.08672	0.08655	-0.01336	-0.01392	\$ 33.40	\$ 34.80
T043 - NextEra Enh 1	0.05627	0.05231	-0.04381	-0.04816	\$109.53	\$120.40
T044 - NextEra Enh 2	0.06311	0.05811	-0.03697	-0.04236	\$ 92.43	\$105.90
T047 - Propel Base 1	0.05789	0.05533	-0.04219	-0.04514	\$105.48	\$112.85
T048 - Propel Base 2	0.05786	0.05513	-0.04222	-0.04534	\$105.55	\$113.35
T049 - Propel Base 3	0.05789	0.05533	-0.04219	-0.04514	\$105.48	\$112.85
T051 - Propel Alt 5	0.05770	0.05498	-0.04238	-0.04549	\$105.95	\$113.73
T052 - Propel Alt 6	0.06717	0.06251	-0.03291	-0.03796	\$ 82.28	\$ 94.90
T053 - Propel Alt 7	0.06601	0.06166	-0.03407	-0.03881	\$ 85.18	\$ 97.03

A vertical image on the left side of the page showing a close-up of a white offshore wind turbine. The turbine has three blades and is mounted on a dark, cylindrical pile foundation in the ocean. The background is a deep blue with faint, light blue circuit-like patterns.

Appendix N: Avoided Cost Assessment

Long Island Offshore Wind Export Public Policy Transmission Planning Report

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June 13, 2023

Appendix N: Avoided Cost Assessment

Overview of Methodology

All of the proposed Long Island PPTN transmission projects increase import and export capability of Long Island that facilitate better utilization of electric supply to meet demand across NYCA. This reduces the expected capacity of new emission-free generation projects needed to meet State policy. To measure the economic impact of this phenomenon, the NYISO has implemented a new assessment in the capacity benefit metric calculations. The avoided capital cost assessment measures the reduction in the capital cost of emission-free generation required to build future resources through 2040. This assessment reflects the benefits from the additional transmission expansion to, among other things, potentially reduce the necessary Renewable Energy Contracts (RECs) procurement by NYSERDA to meet the state energy policy and subsequently decrease the overall cost to New York ratepayers.

The NYISO leveraged a capacity expansion model that is designed to optimize future system buildout while adhering to demand and policy requirements. This analysis was conducted for both the Policy and Policy + B-VS Scenarios for a set of projects that necessitated additional evaluation to distinguish their economic benefits to the transmission system.

Methodology

- Update transfer limits associated with each transmission project
- Offshore wind energy profiles, which are consistent with outputs from production cost simulations, model the “un-curtailed” offshore wind energy associated with the addition of each transmission project
- Increased transfer capability of each transmission project is translated to a reduction in the Zone K capacity reserve requirement
- Perform capacity expansion simulations for both pre- and post-project cases

Evaluation

- Measure the change in generation buildout costs driven by a transmission project’s ability to (1) reduce offshore wind energy curtailment and (2) increase transfer capability to/from Long Island

The results from this assessment can be combined with the production cost metric to develop a holistic comparison of proposed transmission projects economic benefits.

Detailed Assumptions

The proposed transmission projects are represented in the capacity expansion model through: 1) an increase in offshore wind production due to reduced curtailment identified in the production cost models,

2) interzonal transfer limit changes, and 3) Zone K capacity reserve margin decreases driven by increase in transmission security limits. Consistent with production cost simulations, the NYISO used model year 2030 as the estimated in-service date for the proposed transmission projects.

Modeling Offshore Wind Curtailment Reduction in Avoided Cost Assessment

As identified in the **Production Cost** and **Performance** metrics, all proposed projects are effective at reducing offshore wind curtailment levels and unbottling offshore wind resources interconnected to Long Island. To model the impact that the proposed projects have on offshore wind generation, the offshore wind energy outputs from the production cost simulations were used as inputs to the capacity expansion model for the avoided cost assessment starting at the estimated in-service date. Hourly outputs from each offshore wind plant were extracted for both the pre- and post-project cases from the production cost simulations and provided as fixed profiles for the capacity expansion model. Since production cost simulations were run at 5-year intervals (2030, 2035, 2040, and 2045), offshore wind outputs were assumed constant for the in between years for the capacity expansion simulations. For instance, the offshore wind profiles for 2035 were assumed in the capacity expansion model for years 2035-2039. As compared to the pre-project case, each proposed transmission project assumes a higher energy contribution from offshore wind generators due to the reduction in curtailment levels from the production cost simulations.

The figure below summarizes the annual Long Island offshore wind curtailed energy for both the pre-project and post-project scenarios for a set of projects that necessitated additional evaluation to distinguish their economic benefits to the transmission system. Both the Policy and Policy + B-VS Scenarios were evaluated with the Policy + B-VS Scenario having higher offshore wind energy curtailment due to the inclusion of the Barrett – Valley Stream transmission constraints.

Figure 1: Annual Long Island Offshore Wind Curtailment Energy (MWh)

Project	Policy Scenario Annual OSW Curtailment (MWh)			Policy +B-VS Scenario Annual OSW Curtailment (MWh)		
	2030	2035	2040	2030	2035	2040
Pre-Project	173	538	3,131	2,440	2,358	3,823
T035 - LS Power	48	9	383	47	10	387
T036 - NextEra Core 1	103	20	206	2,057	1,910	2,001
T040 - NextEra Core 5	103	22	85	2,031	1,857	1,854
T048 - Propel Base 2	95	18	651	1,389	1,252	1,530
T049 - Propel Base 3	95	16	209	104	26	551
T051 - Propel Alt 5	76	14	52	1,134	1,002	1,079
T052 - Propel Alt 6	84	14	53	1,245	1,092	1,001

Modeling Interzonal Transfer Limits

For each analyzed project, new connections between zones are modeled as new “pipes” in the pipe-and-bubble capacity expansion model. Consequently, the Long Island export interface limit was also upgraded after conducting linear N-1 thermal transfer limit analysis, which accounted for the new pipes between zones.

Figure 2: Long Island “Pipe” Limits Under N-1 Conditions (MW)

Project	Interface Limit		Interface Limit Increase	
	Export (MW)	Import (MW)	Export (MW)	Import (MW)
Pre-Project	1,081	1,644	-	-
T035 - LSPower	3,910	3,505	2,829	1,861
T036 - NextEra Core 1	2,904	3,510	1,823	1,866
T040 - NextEra Core 5	3,238	4,410	2,157	2,766
T048 - Propel Base 2	2,609	2,478	1,528	834
T049 - Propel Base 3	2,595	2,484	1,514	840
T051 - Propel Alt 5	3,309	2,825	2,228	1,181
T052 - Propel Alt 6	3,685	3,164	2,604	1,520

Calculation of LCRs for Avoided Cost Assessment

The purpose of considering capacity reserve margin changes for Zone K in the avoided cost analysis is to estimate potential benefits from improved import capabilities into Zone K. In NYISO’s Locational Minimum Installed Capacity Requirements (LCR) determination process, Transmission Security Limit Floors (TSL Floors), representing the low bound for LCRs, are implemented for all Localities. For purposes of the avoided costs analysis, the NYISO leveraged the methodology of the TSL Floors to approximate the reduction in the Zone K LCR for each of the projects analyzed due to increased import capability. The TSL Floor methodology used for the LCR process would produce the TSL Floors in the ICAP terms. However, since the Avoided Cost Assessment models LCRs in terms of UCAP requirement, the TSL Floor methodology is modified in this assessment to produce the UCAP requirement floors. The Bulk Power Transmission Limit for Long Island as part of this modified TSL Floor calculation was assumed to increase by the incremental import capability for each proposed project under the most limiting N-1-1 contingency conditions as compared to the pre-project case.

The LCRs utilized in NYISO markets are presently determined by the LCR optimizer, based on assumptions and inputs that reflect future system and market conditions. As noted in the **Capacity Benefits** metric, the LCR results are very sensitive to these assumptions and making these assumptions for the 20-year study timeframe would be speculative. Additionally, the actual Zone K LCR can be

impacted by the LCRs of the other Localities. Therefore, for the purpose of the avoided cost analysis in this comparative evaluation, the NYISO considers that it is reasonable to assume that changes in the Zone K LCRs are based on the changes in the modified TSL Floor for Zone K. Figures 3 and 4 show the inputs used in calculating the Zone K LCRs in the avoided costs analysis for purposes of this evaluation. Figure 5 shows the modified TSL Floors calculation used to determine changes in the Zone K LCR assumed in this evaluation for model year 2030. This modified TSL Floor calculation methodology is consistent with the one used for the LCRs for the 2023-2024 Capability Year.

Figure 3: Import Transfer Limit Under N-1-1 Conditions (MW)

Project	Policy Scenario	Policy + B-VS Scenario
Pre-Project	1,005	1,005
T035 - LSPower	2,740	2,080
T036 - NextEra Core 1	3,055	2,950
T040 - NextEra Core 5	3,105	3,075
T048 - Propel Base 2	2,455	2,180
T049 - Propel Base 3	2,325	2,325
T051 - Propel Alt 5	3,145	3,145
T052 - Propel Alt 6	3,255	3,255

Figure 4: Pre-Project Modified TSL Floor Calculation¹

Modified Transmission Security Limit Floor Calculation	Formula	Long Island (Zone K)
Load Forecast (MW)	[A] = Given	5,133 ²
Bulk Power Transmission Limit (MW)	[B] = Studied	325 ³
UCAP Requirement (MW)	[C] = [A]-[B]	4,808
SCR UCAP (MW)	[D]	33.7
UCAP Requirement Floor (%)	[E] = [C+D]/[A]	94.3%

¹ <https://www.nyiso.com/documents/20142/35886565/2023-LCR-Report.pdf/>

² Forecasted load values consistent with Policy Case Scenario 2 from *2021-2040 System and Resource Outlook*

³ Bulk power transmission limits are calculated using N-1-1 import capability minus Neptune's import capability. Post-project limits were assumed to increase by the incremental import capability for each project under the most limiting N-1-1 contingency conditions as compared to the pre-project case.

Figure 5: Model Year 2030 LCR (%UCAP Equivalent) Assumed In Assessment

Project	Policy Scenario	Policy + B-VS Scenario
Pre-Project	94%	94%
T035 - LSPower	58%	72%
T036 - NextEra Core 1	51%	54%
T040 - NextEra Core 5	50%	50%
T048 - Propel Base 2	64%	70%
T049 - Propel Base 3	67%	67%
T051 - Propel Alt 5	49%	49%
T052 - Propel Alt 6	47%	47%

*Assumed LCRs are representative based on model assumptions described above and cannot be relied upon for future estimation of LCRs.

Summary of Assumptions

The offshore wind energy curtailment reduction (TWh), Transmission Security Limit increase (MW), and Zone K export capability increase assumptions used for the projects analyzed are included below for the Policy and Policy + B-VS Scenarios.

Figure 6: Avoided Cost Assessment Project Assumption Summary – Policy Scenario

Project	Approximated 20-Year Offshore Wind Curtailment Reduction (TWh)	Zone K Export Capability Increase (MW)	Zone K Bulk Power Transmission Limit Increase (MW)
T035 - LSPower	6.0	2,829	2,015
T036 - NextEra Core 1	5.8	1,823	2,330
T040 - NextEra Core 5	6.0	2,157	2,380
T048 - Propel Base 2	5.5	1,528	1,730
T049 - Propel Base 3	5.9	1,514	1,600
T051 - Propel Alt 5	6.2	2,228	2,420
T052 - Propel Alt 6	6.1	2,604	2,530

Figure 7: Avoided Cost Assessment Project Assumption Summary – Policy + B-VS Scenario

Project	Approximated 20-Year Offshore Wind Curtailment Reduction (TWh)	Zone K Export Capability Increase (MW)	Zone K Bulk Power Transmission Limit Increase (MW)
T035 - LSPower	27.1	2,829	1,355
T036 - NextEra Core 1	6.0	1,823	2,225
T040 - NextEra Core 5	6.5	2,157	2,380
T048 - Propel Base 2	13.1	1,528	1,455
T049 - Propel Base 3	26.6	1,514	1,600
T051 - Propel Alt 5	16.0	2,228	2,420
T052 - Propel Alt 6	15.1	2,604	2,530

Simulation Results

With the proper representation of each transmission project in place, the capacity expansion model simulation was performed up to 2040, and results were compiled. The analysis identified a few common trends that describe the impact of the evaluated transmission projects' impact on future generation buildout to meet system needs.

- All projects reduce the amount of upstate solar capacity needed due to the reduction in Long Island offshore wind energy curtailment. The increased energy associated with reduced curtailment allowed energy demand and renewable policy targets to be met with less renewable generation projects.
- All projects improved the transmission connections between Upstate and Downstate New York areas and increased the power transfer capability between the regions. With increased transmission limits to Long Island, the Zone K capacity reserve margin requirement is reduced and the capacity needed to meet statewide reliability requirements can then be relocated to more cost-effective geographic areas.

Each evaluated transmission project provided different magnitudes of benefits but were generally produced by the same system impacts as described. The analysis revealed that the specific designs of the transmission project affect how much savings can be achieved.

Offshore Wind Curtailment Reduction Impacts

As each proposed transmission project increases the electrical connectivity between Long Island and other areas in New York, more offshore wind energy can be injected into the NYCA. Increased offshore wind energy production due to the addition of a transmission project displaced the need for as much solar generation capacity and its production in several upstate zones as compared to the pre-project case. The figures below highlight the reduction in solar capacity due to the addition of each project evaluated in the Policy and Policy + B-VS Scenarios.

Figure 8: Policy Scenario: 2040 Solar (UPV) Installed Capacity Delta to Pre-Project

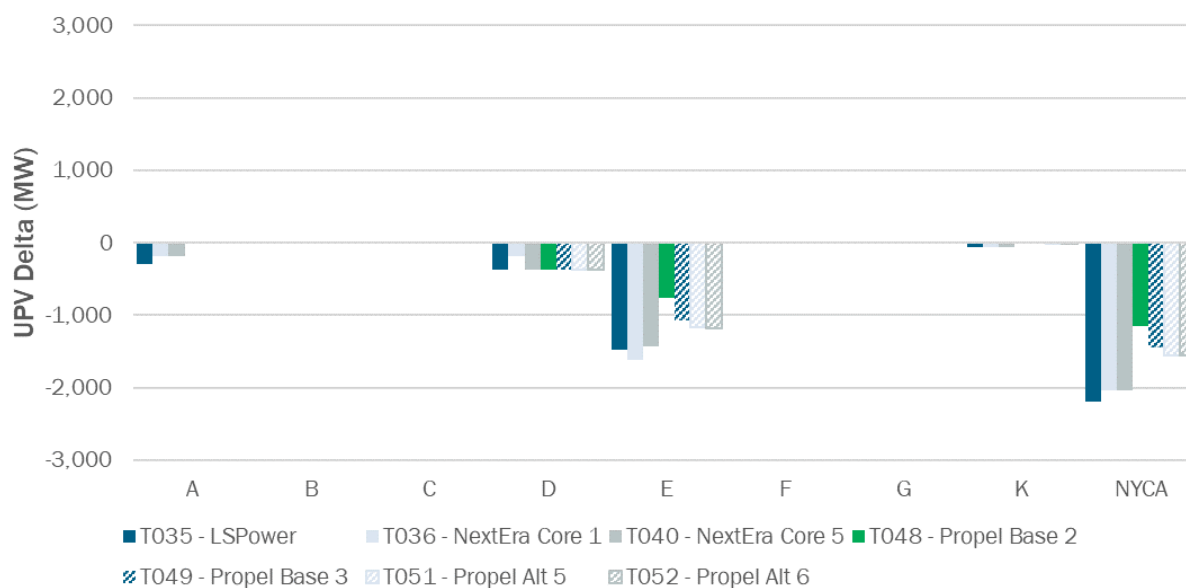


Figure 9: Policy + B-VS Scenario: 2040 Solar (UPV) Installed Capacity Delta to Pre-Project

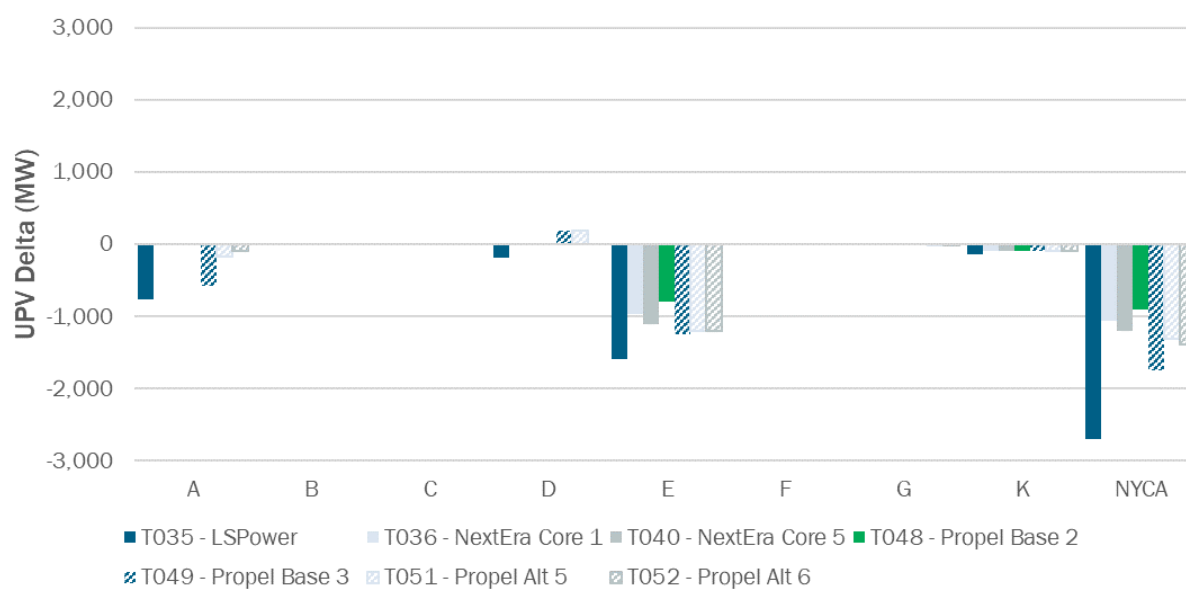


Figure 10: Policy Scenario: 2040 UPV Installed Capacity Delta to Pre-Project (MW)

Project	A	B	C	D	E	F	G	K	NYCA
T035 - LSPower	-292	0	0	-373	-1,471	0	0	-54	-2,190
T036 - NextEra Core 1	-183	0	0	-186	-1,609	0	0	-54	-2,031
T040 - NextEra Core 5	-182	0	0	-373	-1,422	0	0	-54	-2,030
T048 - Propel Base 2	0	0	0	-373	-763	0	0	-7	-1,142
T049 - Propel Base 3	0	0	0	-373	-1,069	0	0	-7	-1,448
T051 - Propel Alt 5	0	0	0	-373	-1,171	0	0	-7	-1,551
T052 - Propel Alt 6	0	0	0	-373	-1,177	0	0	-7	-1,556

Figure 11: Policy + B-VS Scenario: 2040 UPV Installed Capacity Delta to Pre-Project (MW)

Project	A	B	C	D	E	F	G	K	NYCA
T035 - LSPower	-773	0	0	-186	-1,592	0	-10	-141	-2,702
T036 - NextEra Core 1	0	0	0	0	-964	0	0	-94	-1,058
T040 - NextEra Core 5	0	0	0	0	-1,102	0	0	-94	-1,196
T048 - Propel Base 2	0	0	0	0	-804	0	-10	-94	-907
T049 - Propel Base 3	-578	0	0	186	-1,256	0	-10	-94	-1,751
T051 - Propel Alt 5	-181	0	0	186	-1,208	0	-10	-94	-1,306
T052 - Propel Alt 6	-89	0	0	0	-1,198	0	-10	-94	-1,390

Several of the proposed projects reduce annual offshore wind curtailment in 2040 by over 3 TWh. Assuming a 40% annual capacity factor for offshore wind and 20% for solar, this equates to approximately a 1,700 MW equivalent reduction in solar capacity. The charts above show results from the fully optimized capacity expansion model where the proposed projects displace between 0.9 – 2.7 GW UPV capacity NYCA wide by 2040. Generally, the results from the model align with the simple calculation provided given the reduced curtailment provided by each project. For each project, the majority of solar capacity displaced is in Zones A, D, and E.

Long Island Import Capability Increase Impact

Complementary to the reduction of curtailment benefits, the increased import transfer limits from the proposed projects also increase the free exchange of energy to Long Island from other NYCA zones. This allows for a reduction in the amount of generation capacity needed to be geographically located on Long Island to meet reliability requirements. As a result, emission-free generation capacity (e.g., Dispatchable Emission Free Resources) can be more cost-effectively constructed in New York areas outside of Long Island, and this produces a capital cost savings.

The figures below show the magnitude of Dispatchable Emission Free Resource (DEFER) capacity movement from Long Island to upstate zones produced by the set of proposed projects evaluated in the

avoided cost assessment.

Figure 12: Policy Scenario: 2040 DEFR Installed Capacity Delta to Pre-Project

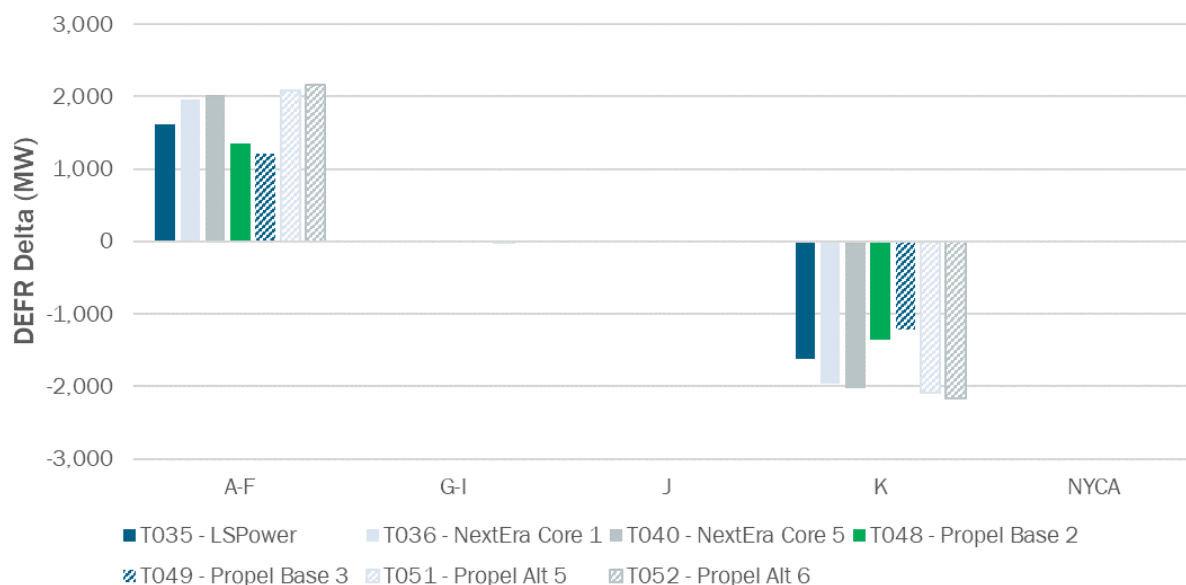


Figure 13: Policy + B-VS Scenario: 2040 DEFR Installed Capacity Delta to Pre-Project

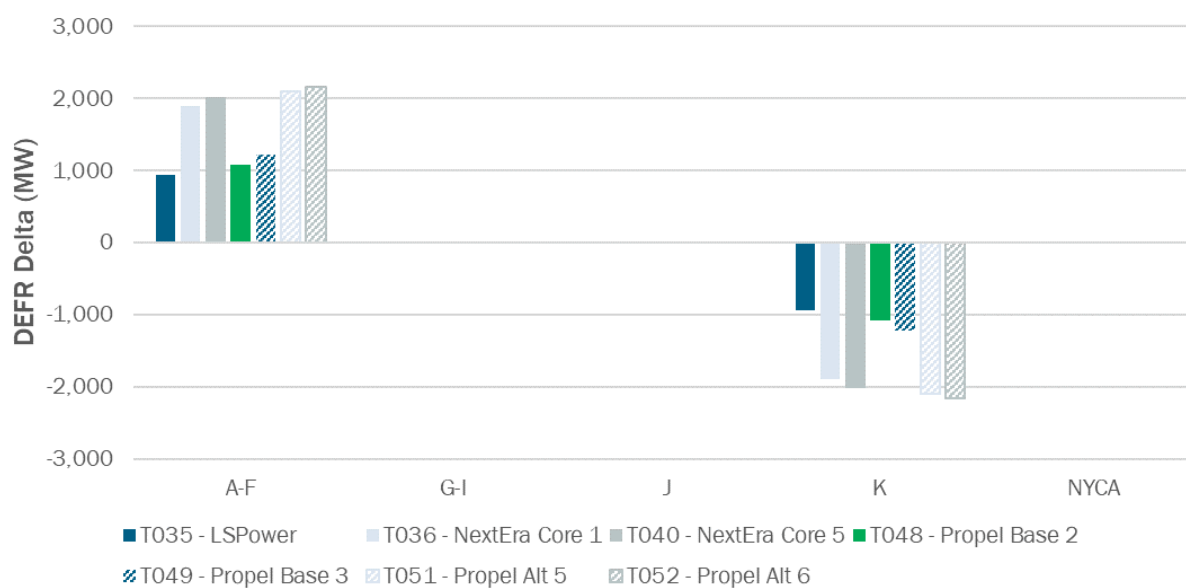


Figure 14: Policy Scenario: 2040 DEFR Installed Capacity Delta to Pre-Project (MW)

Project	A-F	G-I	J	K	NYCA
T035 - LSPower	1,618	0	0	-1,618	0
T036 - NextEra Core 1	1,955	0	0	-1,955	0
T040 - NextEra Core 5	2,023	0	0	-2,023	0
T048 - Propel Base 2	1,349	0	0	-1,349	0
T049 - Propel Base 3	1,214	0	0	-1,214	0
T051 - Propel Alt 5	2,090	0	0	-2,090	0
T052 - Propel Alt 6	2,158	0	0	-2,158	0

Figure 15: Policy + B-VS Scenario: 2040 DEFR Installed Capacity Delta to Pre-Project (MW)

Project	A-F	G-I	J	K	NYCA
T035 - LSPower	944	0	0	-944	0
T036 - NextEra Core 1	1,888	0	0	-1,888	0
T040 - NextEra Core 5	2,023	0	0	-2,023	0
T048 - Propel Base 2	1,079	0	0	-1,079	0
T049 - Propel Base 3	1,214	0	0	-1,214	0
T051 - Propel Alt 5	2,090	0	0	-2,090	0
T052 - Propel Alt 6	2,158	0	0	-2,158	0

The proposed projects displace between 0.9 – 2.2 GW of DEFR capacity in Zone K and shift that capacity to upstate zones (A-F) to satisfy the NYCA capacity reserve margin. The DEFR capacity is shifted to upstate zones where it is more cost-effective to build generation.

Avoided Capital Cost Results

The two primary factors driving the magnitude of avoided generation capacity are reduced offshore wind energy curtailments and the increased Zone K import transmission limits. Unbottled offshore wind energy reduces the need to build as much solar capacity in upstate zones and, in turn, provides avoided capital cost savings. Increased import transfer limits into Long Island lower the zone's effective capacity margin requirement and enable the movement of DEFR capacity from Zone K to upstate zones where capital costs are lower.

The magnitude of the capital cost savings for each proposed project is generally correlated with the amount of increase in Zone K import capability and reduction in offshore wind energy curtailment. Some secondary factors, such as which zone a project's new lines are connected and the project's increase in Zone K export limit, impact the capital cost savings and could also be used to differentiate the projects.

The figures below show the results of the avoided cost⁴ analysis with disaggregated impacts of

⁴ Generator capital costs align with assumptions for Policy Case Scenario 2 from the *2021-2040 System and Resource Outlook* <https://www.nyiso.com/documents/20142/33395392/2021-2040-Outlook-Appendix-D.pdf>

reduced solar capacity buildout and relocated DEFR capacity for the two scenarios modeled.

Figure 16: Policy Scenario Total Capital Cost Savings

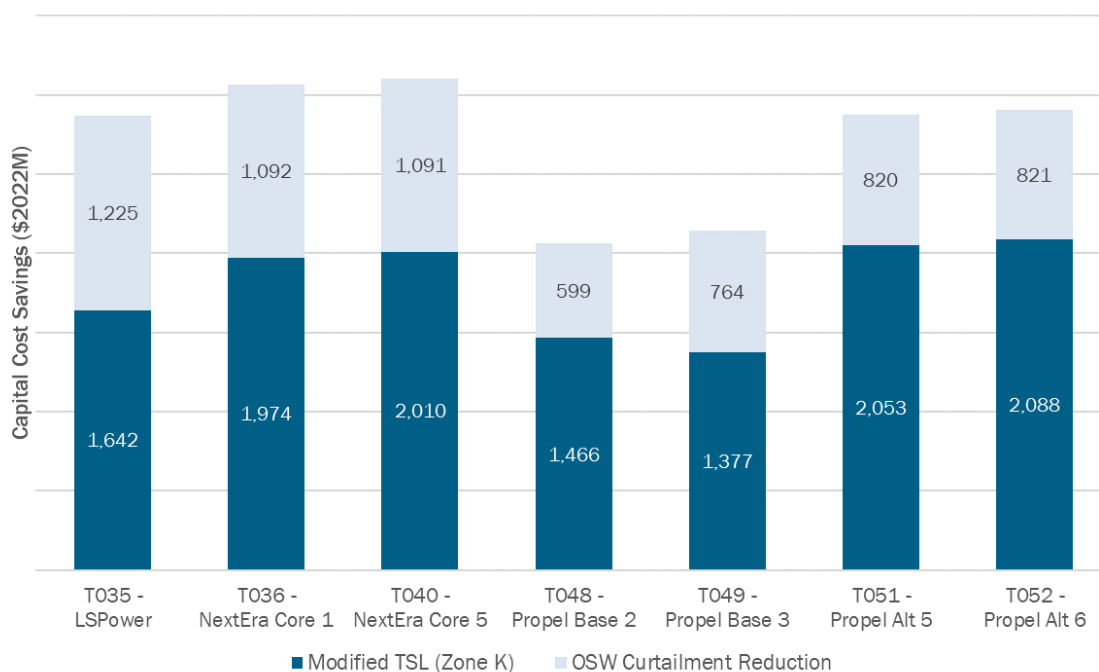
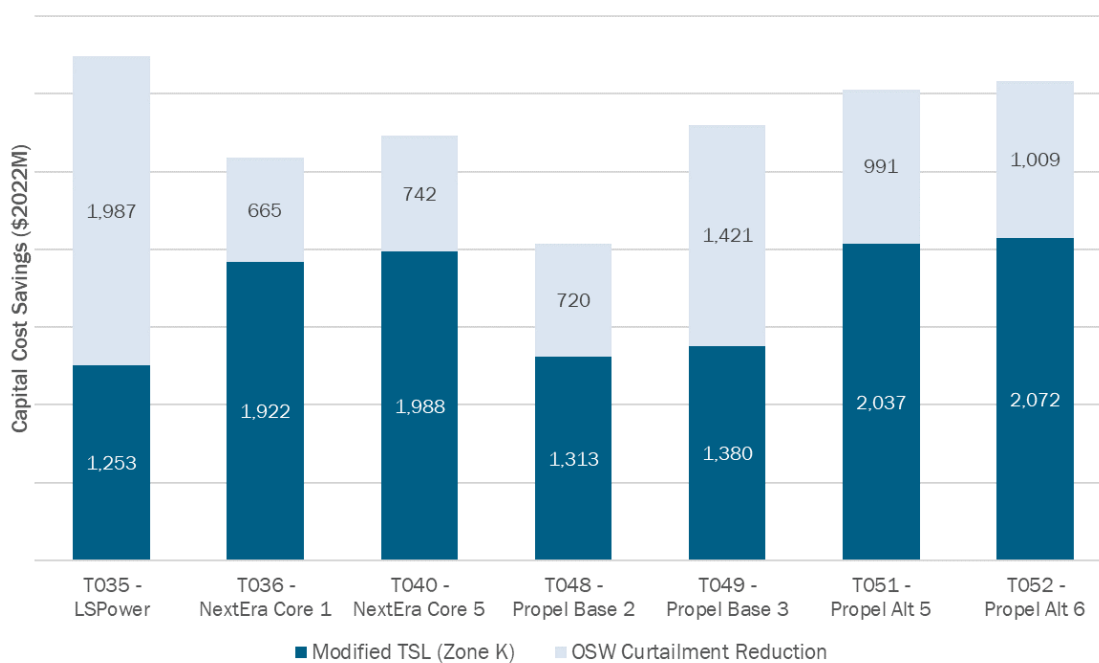


Figure 17: Policy + B-VS Scenario Total Capital Cost Savings



All projects analyzed create capital cost savings through the reduction in upstate solar capacity

additions. The avoided solar capacity represented less than half of the total capital cost savings calculated. Additionally, all projects analyzed in this assessment helped to increase the Long Island transmission security limit and reduced the capacity reserve margin for Long Island (per methodology described above). With a reduced capacity reserve margin in Zone K, DEFR capacity was able to be sited in less costly upstate areas, which constituted over half of the total avoided capital cost savings.

The figure below summarizes the total avoided cost savings for each project analyzed.

Figure 18: Total Capital Cost Savings (\$2022 M)

Project	Total Capital Cost Savings (\$2022 M)	
	Policy Scenario	Policy + B-VS Scenario
T035 - LSPower	2,866	3,240
T036 - NextEra Core 1	3,066	2,586
T040 - NextEra Core 5	3,101	2,731
T048 - Propel Base 2	2,065	2,033
T049 - Propel Base 3	2,141	2,801
T051 - Propel Alt 5	2,873	3,028
T052 - Propel Alt 6	2,909	3,081

In total, the proposed projects evaluated enable between \$2.0-3.2B of avoided capital cost savings through 2040 under this analysis. Projects that enable higher reductions in Long Island offshore wind energy curtailment and increase import capability to Long Island produce the highest savings.

Appendix O: Propel NY Designated Public Policy Project

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

June 13, 2023



Appendix O: Propel NY Designated Public Policy Project

Designated Public Policy Project

Pursuant to Section 31.4.11 of the OATT, the NYISO has identified the following facilities of the recommended project, which is further described in Appendix E and Propel NY's project submittal, as a Designated Public Policy Project and identified Propel NY as the Designated Entity. The Designated Public Policy Project is required to be in service on or before the Required Project In-Service Date of May 2030.

- Barrett 345 kV Substation
- Ruland Road 138/345 kV Substation
- Shore Road 138/345 kV Substation
- Barrett - East Garden City 345 kV line
- East Garden City - Shore Road 345 kV line
- East Garden City - Tremont 345 kV line
- Ruland Road - Shore Road 345 kV line
- Shore Road - Syossett 138 kV line
- Two Shore Road - Sprain Brook 345 kV lines



Appendix P: LIPA Designated Public Policy Project

Long Island Offshore Wind Export Public Policy Transmission Planning Report

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June 13, 2023

Appendix P: LIPA Designated Public Policy Project

Designated Public Policy Project

Pursuant to Section 31.4.11 of the OATT, the NYISO has identified the following facilities of the recommended project, which is further described in Appendix E and Propel NY's project submittal, as a Designated Public Policy Project and preliminarily identified LIPA as the Designated Entity. The Designated Public Policy Project is required to be in service on or before the Required Project In-Service Date of May 2030.

- Relay upgrades at Barrett 138 kV Substation
- Installation of series reactors and relay upgrades at East Garden City 345/138 kV Substation
- Relay upgrades at Valley Stream 138 kV Substation
- Relay upgrades at Lake Success 138 kV Substation
- Installation of breaker at Newbridge Road 345/138 kV Substation
- Installation of PAR at Northport 138 kV Substation
- Installation of series reactors at Ruland Road 138 kV Substation
- Installation of breaker at Holbrook 138 kV Substation
- Central Islip - Hauppauge 138 kV line uprate
- Ruland Road - East Garden City 345 kV line converting the existing Ruland Road - New Bridge - East Garden City 138 kV lines
- Syossett - Greenlawn 138 kV line uprate
- Syossett - Oakwood 138 kV line uprate

Appendix Q: NYPA Designated Public Policy Project

Long Island Offshore Wind Export Public Policy Transmission Planning Report

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Appendix Q: NYPA Designated Public Policy Project

Designated Public Policy Project

Pursuant to Section 31.4.11 of the OATT, the NYISO has identified the following facilities of the recommended project, which is further described in Appendix E and Propel NY's project submittal, as a Designated Public Policy Project and preliminarily assigned NYPA as the Designated Entity. The Designated Public Policy Project is required to be in service on or before May 2029 in order for the recommended project to meet the overall in-service date.

- Expansion of East Garden City 345 kV Substation into a breaker-and-a-half configuration, installation of shunt reactors and a 345 kV PAR

Appendix R: Con Edison Designated Public Policy Project

Long Island Offshore Wind Export Public Policy Transmission Planning Report

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Independent System Operator**

June 13, 2023



Appendix R: Con Edison Designated Public Policy Project

Designated Public Policy Project

Pursuant to Section 31.4.11 of the OATT, the NYISO has identified the following facilities of the recommended project, which is further described in Appendix E and Propel NY's project submittal, as a Designated Public Policy Project and preliminarily identified Consolidated Edison Company of New York, Inc. as the Designated Entity. The Designated Public Policy Project is required to be in service on or before the Required Project In-Service Date of May 2030.

- Installation of breakers at Rainey 345 kV Substation