

Long Island Offshore Wind Export Public Policy Transmission Planning Report

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Management Committee (MC)

May 31, 2023

Agenda

- Long Island Offshore Wind Export PPTN
- Viability & Sufficiency Assessment
- Evaluation Summary
- Project Ranking and Selection Recommendation
- Next Steps



Long Island Offshore Wind Export PPTN



Public Policy Transmission Planning Process: Long Island Offshore Wind Export Public Policy Transmission Need

Solicitation of Transmission Needs by the NYISO

60-day period

 August - October 2020 Determination of Transmission Need by the PSC

- SAPA notice seeking comments
- PSC identify Transmission Need driven by Public Policy Requirements
- Feb. 2021: LIPA filed with PSC on Public Policy Requirement
- Mar. 2021 PSC issued the order

Solicitation of Solutions by the NYISO

- NYISO conducts baseline analysis
- Hold Technical Conference
- Issue project solicitation
- 60-day window
- March August 2021: baseline analysis
- August October
 2021: Solicitation
 window

Viability and Sufficiency Assessment by the NYISO

- Project review and additional information request if necessary
- October 2021 –
 April 2022

Evaluation and Selection

- 10 categories of metrics, 30-year database
- Consider interconnection studies
- Stakeholder review
- NYISO Board of Directors review and action
- April December 2022: evaluation
- February May 2023: stakeholder review

Blue means NYISO steps

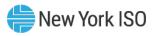
Green means PSC steps



PSC Order Highlights

"The CLCPA constitutes a Public Policy Requirement driving the need for:

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

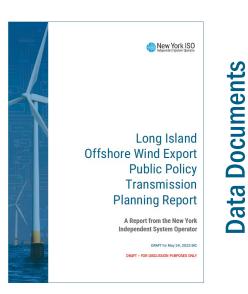


Solicitation for Long Island PPTN Solutions

- NYISO discussed baseline assumptions and viability & sufficiency Criteria with stakeholders and prospective Developers
 - Numerous ESPWG/TPAS meetings from April December 2021
 - Technical Conference on July 8, 2021
 - FAQ documents addressing Developer questions
- Solicitation for solutions issued on August 12, 2021 with responses due on October 11, 2021
- 19 projects proposed by four Developers



Long Island Public Policy Transmission Need Data Catalog



Appendix A: Viability & Sufficiency Assessment

Appendix B: Independent Consultant Report

Appendix C: Market Monitoring Unit Report

Appendix D: Frequently Asked Questions

Appendix E: Proposed Solutions

Appendix F: Facility Characterization List

Appendix G: Scenarios

Appendix H: Additional Information

Appendix I: Transfer Limit Analysis

Appendix J: Expandability

LIPPTN Need Order

Baseline Assessment Results

Technical Conference

FAQ, Supplemental FAQ, Supplemental FAQ#2

Project Solicitation

Project Descriptions

Viability & Sufficiency Assessment

Final Facility Characterization List

2021-2040 System & Resource Outlook
Data Catalog

2022 Reliability Needs Assessment

Appendix K: System Strength

Appendix L: Production Cost &

Performance

Appendix M: Capacity Benefits LOLE

Reduction

Appendix N: Avoided Cost Assessment

Appendix O: Propel NY Designated Public

Policy Project

Appendix P: LIPA Designated Public Policy

Project

Appendix Q: NYPA Designated Public

Policy Project

Appendix R: Con Edison Designated Public

Policy Project

Stakeholder Presentations

March 24 & March 26, 2021

Order Addressing Public Policy Requirements for Transmission Planning Purposes

April 7, 2021

Long Island Offshore Wind Export

April 23, 2021

Long Island Offshore Wind Export

May 3, 2021

Baseline Assessment Scope

May 20, 2021

Baseline Assessment Update

June 1, 2021

Baseline Assessment Update

June 22, 2021

Baseline Assessment Update

July 1, 2021

Baseline Assessment Results

July 8, 2021

Technical Conference

August 18, 2021

Long Island Offshore Wind Export PPTN Update October 1, 2021

Long Island Offshore Wind Export PPTN Update

December 17, 2021

VSA Update

January 25, 2022

VSA Update

April 1, 2022

VSA Comments and Timeline

June 8, 2022

Facility Characterization List

July 26, 2022

Evaluation Metrics

October 24, 2022

Evaluation Assumptions

November 18, 2022

Capacity Benefit

January 24, 2023

Schedule Update

February 8, 2023

Power Flow Results

February 16, 2023

Production Cost and Capacity Benefits Results

March 2, 2023

Property Rights, Routing, and Potential Construction Delays

March 24, 2023

Independent Cost Estimates, Scenario Results, Avoided Cost Methodology

April 3, 2023

Cost Caps, Top-Tier Projects, Draft Report

April 12, 2023

Avoided Cost Results, Operability Sensitivity Results, Qualitative Cost Cap Criteria

April 25, 2023

Report Appendices

May 5, 2023

Qualitative Cost Cap and Report Update

May 11, 2023

Project Recommendation

May 16, 2023

Long Island PPTN Review

May 24, 2023

Long Island PPTN Review



Viability & Sufficiency Assessment



Viability & Sufficiency Assessment

- NYISO modeled the proposed solutions in the Baseline Scenario
- NYISO performed steady-state N-0, N-1, and N-1-1 analysis
 - Downstate renewables were maintained at full output, while certain system adjustments were made consistent with transmission security criteria
- High-level assessment of project viability
 - Considered whether projects are technically practicable, proposed plans to obtain real property and facilities are reasonably feasible, proposed solutions can be completed in the required timeframe, and the Developers' qualifications in light of the proposed projects



Assumptions

Baseline Scenario

- ~3,000 MW in Zone K at full output
- ~6,000 MW in Zone J at full output
- Project sufficiency was determined from this baseline

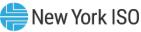
Alternate Scenario

- ~6,000 MW Offshore Wind in Zone
 K at full output
- ~6,000 MW Offshore Wind in Zone J at full output
- Other major assumptions consistent with Baseline Scenario

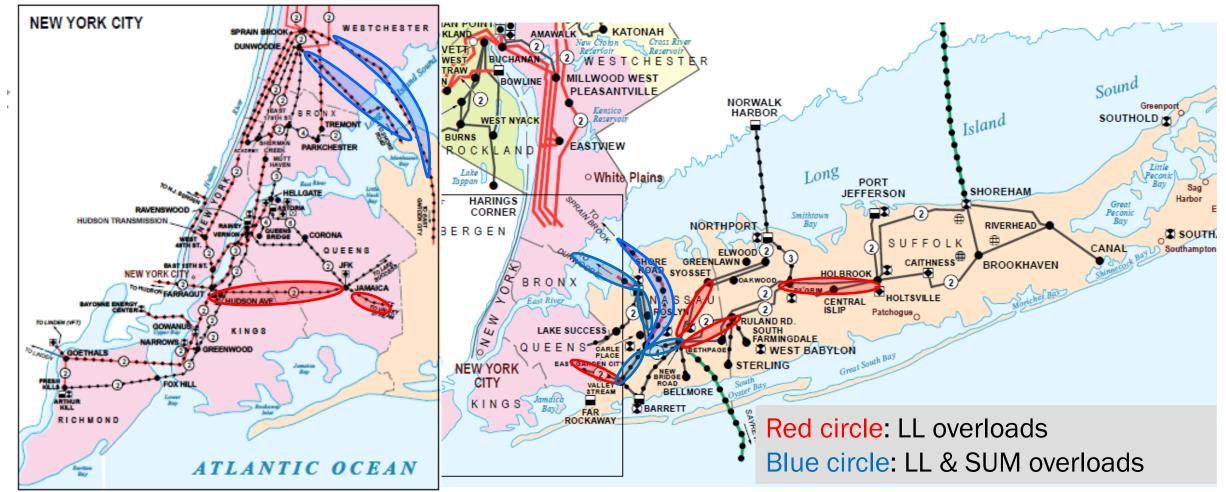


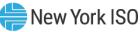
Baseline Scenario: Significant N-0 Constraints





Alternate Scenario: Significant N-0 Constraints





Sufficiency Criteria

The NYISO evaluated each proposed solution to determine whether it independently satisfied the Long Island PPTN based on the following criteria:

- Adds at least one bulk transmission intertie cable connecting between Zone
 K and the rest of the New York Control Area
- Ensures full output of at least 3,000 MW of offshore wind connected to Long Island (Zone K) while maintaining transmission security under N-0, N-1, and N-1-1 for summer peak and light load conditions
 - Focus was to resolve constraints on bulk and NYISO-secured facilities impacted by offshore wind generators connected to Long Island
- The letter soliciting solutions contains further detail on the sufficiency criteria



Viability & Sufficiency Assessment Findings

| Developer | Project Name | Project # | Category | Viable ? | Sufficient ? |
|---|---|--------------|----------|----------|--------------|
| LS Power Grid New York Corporation I | Atlantic Gateway | T035 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Core 1 | T036 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Core 2 | T037 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Core 3 | T038 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Core 4 | T039 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Core 5 | T040 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Core 6 | T041 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Core 7 | T042 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Enhanced 1 | T043 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Enhanced 2 | T044 | PPTP | Yes | Yes |
| NextEra Energy Transmission New York, Inc | New York Renewable Connect - Plus3 | OPP45 | OPPP | Yes | Yes |
| Anbaric Development Partners, LLC | Downstate Clean Powerlink | T046 | PPTP | Yes | No |
| New York Power Authority/New York Transco LLC | Propel NY Energy – Base Solution 1 | T047 | PPTP | Yes | Yes |
| New York Power Authority/New York Transco LLC | Propel NY Energy – Base Solution 2 | T048 | PPTP | Yes | Yes |
| New York Power Authority/New York Transco LLC | Propel NY Energy – Base Solution 3 | T049 | PPTP | Yes | Yes |
| New York Power Authority/New York Transco LLC | Propel NY Energy – Base Solution 4 | T050 | PPTP | Yes | No |
| New York Power Authority/New York Transco LLC | Propel NY Energy – Alternate Solution 5 | T051 | PPTP | Yes | Yes |
| New York Power Authority/New York Transco LLC | Propel NY Energy – Alternate Solution 6 | T052 | PPTP | Yes | Yes |
| New York Power Authority/New York Transco LLC | Propel NY Energy – Alternate Solution 7 | T053 | PPTP | Yes | Yes |

NYISO submitted the Viability & Sufficiency Assessment to the PSC on April 5, 2022, and all 16 eligible projects elected to
proceed to be evaluated for purposes of selection as the more efficient or cost-effective solution



Evaluation Summary



Criteria and Metrics

Per Section 31.4.8.1 of the NYISO OATT, NYISO considered the following criteria and metrics:

- Capital Cost Estimate
- Voluntary Cost Cap
- Transfer Analysis & Cost per MW
- Expandability Electrical & Physical
- Operability
- Property Rights & Routing
- Potential Construction Delays
- Production Cost

- Performance
- Capacity Benefits
- Other Considerations: Metrics prescribed in PSC Order, Interconnection Studies, Consequences for Other Regions, Impact on Wholesale Electricity Markets, Integration with Local Transmission Owner Plans



Unique Factors of the Proposed Solutions

- Proposed transmission lines are predominantly underground in densely populated areas and are proposed in new utility easements
- Proposed solutions vary greatly in design and are considerable in scope
- Proposed solutions increase transfer capability between localities in both directions
- The Long Island PPTN is for transmission expansion to unbottle resources that are expected to be installed in the NYCA system to meet the CLCPA
- Proposed solutions contain voluntary Cost Caps that are governed by new requirements and evaluation metrics under the tariff
- First set of proposed solutions subject to the new mechanism that implements the Transmission Owners' right of first refusal related to upgrades



Databases for Comparative Evaluation

- Power flow: used in evaluating metrics, such as transfer limit, expandability, and operability
- Resource adequacy: used to maintain sufficient resources and analyze capacity benefits
- <u>Production cost</u>: used in evaluating metrics, such as production cost savings, emission, LBMP, load payment, and performance
- <u>Capacity expansion</u>: used in evaluating avoided cost of future generation buildout
- <u>Independent consultant (SECo) databases</u>: used in evaluating metrics, such as overnight capital cost, schedules, property rights, and expandability
- Details on the production cost, capacity expansion, and resource adequacy assumptions can be found in the Data Matrices in the 2021-2040 System & Resource Outlook and the 2022 RNA report appendices



Evaluation Scenarios

Baseline Scenario:

- 9,000 MW of offshore wind (3,000 MW in Long Island and 6,000 MW in NYC)
- Moderate buildout of upstate renewables and expected fossil fuel retirements

Policy Scenario:

- 12,000 MW of offshore wind (6,000 MW in Long Island and 6,000 MW in NYC)
- Higher buildout of upstate renewables and fossil fuel retirements to meet CLCPA mandates

Policy Scenario + Barrett - Valley Stream Constraint:

 Policy Scenario with the modeling of the known System Upgrade Facilities for Empire Wind 2, which do not relieve congestion on the Barrett – Valley Stream 138 kV path



Cost Estimates and Cost Caps

- NYISO's consultant, SECO, developed independent cost estimates for each proposed project, considering required material and labor cost by equipment, engineering and design work, permitting, site acquisition, procurement and construction work, and commissioning
- NYISO considered a Developer's voluntary Cost Caps by evaluating both quantitative and qualitative metrics under the tariff
 - Quantitative Evaluation: The NYISO used the proposed Cost Cap for the contained capital cost elements (Included Capital Costs) to estimate the total capital cost of the project that is used in existing quantitative cost metrics
 - Qualitative Evaluation: The NYISO assessed the effectiveness of the proposed Cost Cap in providing an incentive to the Developers to contain their Included Capital Costs, in protecting ratepayers from Included Capital Cost overruns, and the magnitude of the difference between the Cost Cap and the independent cost estimate



Capital Cost Estimates

| Project | Cost Cap | Developer Cost Cap (\$M) | Independent Estimate of Included Capital Costs (\$M) | Independent Estimate of Excluded Capital Costs (\$M) | Total Cost Estimates* (\$M) |
|-----------------------|------------|--------------------------------|--|--|-----------------------------------|
| T035 - LS Power | Hard Cap | \$3,074 | \$5,920 | \$78 | \$3,152 |
| T036 - NextEra Core 1 | 50/50 Soft | \$5,882 | \$3,230 | \$1,137 | \$7,019 |
| T037 - NextEra Core 2 | 50/50 Soft | \$6,867 | \$3,627 | \$1,259 | \$8,126 |
| T038 - NextEra Core 3 | 50/50 Soft | \$7,444 | \$4,252 | \$1,209 | \$8,653 |
| T039 - NextEra Core 4 | 50/50 Soft | \$7,211 | \$4,457 | \$1,272 | \$8,483 |
| T040 - NextEra Core 5 | 50/50 Soft | \$5,898 | \$3,610 | \$1,086 | \$6,984 |
| T041 - NextEra Core 6 | 50/50 Soft | \$6,774 | \$4,448 | \$1,138 | \$7,912 |
| T042 - NextEra Core 7 | 50/50 Soft | \$10,373 | \$13,750 | \$1,131 | \$13,193 |
| T043 - NextEra Enh 1 | 50/50 Soft | \$11,471 | \$8,753 | \$1,298 | \$12,769 |
| T044 - NextEra Enh 2 | 50/50 Soft | \$14,991 | \$16,128 | \$1,338 | \$16,898 |
| T047 - Propel Base 1 | 20/80 Soft | \$1,877 | \$2,269 | \$289 | \$2,480 |
| T048 - Propel Base 2 | 20/80 Soft | \$1,687 | \$1,966 | \$211 | \$2,121 |
| T049 - Propel Base 3 | 20/80 Soft | \$2,131 | \$2,642 | \$295 | \$2,835 |
| T051 - Propel Alt 5 | 20/80 Soft | \$2,554 | \$2,902 | \$430 | \$3,262 |
| T052 - Propel Alt 6 | 20/80 Soft | \$3,953 | \$4,071 | \$658 | \$4,705 |
| T053 - Propel Alt 7 | 20/80 Soft | \$5,118 | \$5,113 | \$458 | \$5,576 |

^{*} In calculating the total cost estimate in this table, the NYISO, consistent with the OATT, did not estimate or add to the Excluded Capital Costs of any costs concerning unforeseeable environmental mitigation or remediation costs or the financing of the proposed project, such as debt costs or allowance for funds used during construction.



Qualitative Assessment of Cost Caps

| Project | Developer Cost Cap Share (%) | Qualitative Criteria I | Qualitative Criteria II | Qualitative Criteria III |
|-----------------------|---------------------------------|---------------------------|----------------------------|-----------------------------|
| T035 - LSPower | 100 | Excellent | Good | Poor |
| T036 - NextEra Core 1 | 50 | Fair | Fair | Poor |
| T037 - NextEra Core 2 | 50 | Fair | Fair | Poor |
| T038 - NextEra Core 3 | 50 | Fair | Fair | Poor |
| T039 - NextEra Core 4 | 50 | Fair | Fair | Poor |
| T040 - NextEra Core 5 | 50 | Fair | Fair | Poor |
| T041 - NextEra Core 6 | 50 | Fair | Fair | Poor |
| T042 - NextEra Core 7 | 50 | Fair | Good | Fair |
| T043 - NextEra Enh 1 | 50 | Fair | Fair | Poor |
| T044 - NextEra Enh 2 | 50 | Fair | Fair | Good |
| T047 - Propel Base 1 | 20 | Poor | Fair | Excellent |
| T048 - Propel Base 2 | 20 | Poor | Fair | Excellent |
| T049 - Propel Base 3 | 20 | Poor | Fair | Good |
| T051 - Propel Alt 5 | 20 | Poor | Poor | Excellent |
| T052 - Propel Alt 6 | 20 | Poor | Poor | Good |
| T053 - Propel Alt 7 | 20 | Poor | Poor | Good |

- Criterion I: Cost Containment Incentive
- Criterion II: Consumer Risk, Exposure & Uncertainty
- Criterion III: Expected Costs vs. Developer's Cap

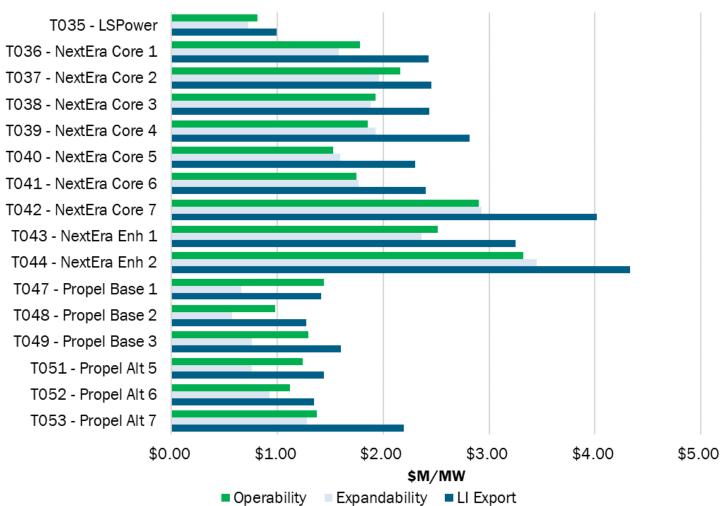


Transfer Capability (N-1)

| | LI Import | | LI Export | |
|-----------------------|-----------|----------|-----------|----------|
| Project | Limit MW | Delta MW | Limit MW | Delta MW |
| Pre-Project | 1,665 | | 375 | |
| T035 - LS Power | 3,220 | +1,555 | 3,550 | +3,175 |
| T036 - NextEra Core1 | 3,405 | +1,740 | 3,265 | +2,890 |
| T037 - NextEra Core 2 | 3,410 | +1,745 | 3,685 | +3,310 |
| T038 - NextEra Core 3 | 3,440 | +1,775 | 3,925 | +3,550 |
| T039 - NextEra Core4 | 3,415 | +1,750 | 3,385 | +3,010 |
| T040 - NextEra Core5 | 3,420 | +1,755 | 3,405 | +3,030 |
| T041 - NextEra Core 6 | 3,460 | +1,795 | 3,670 | +3,295 |
| T042 - NextEra Core 7 | 3,460 | +1,795 | 3,660 | +3,285 |
| T043 - NextEra Enh 1 | 3,755 | +2,090 | 4,305 | +3,930 |
| T044 - NextEra Enh 2 | 3,735 | +2,070 | 4,275 | +3,900 |
| T047 - Propel Base 1 | 3,140 | +1,475 | 2,130 | +1,755 |
| T048 - Propel Base 2 | 3,175 | +1,510 | 2,040 | +1,665 |
| T049 - Propel Base 3 | 3,140 | +1,475 | 2,145 | +1,770 |
| T051 - Propel Alt 5 | 3,475 | +1,810 | 2,640 | +2,265 |
| T052 - Propel Alt 6 | 3,460 | +1,795 | 3,860 | +3,485 |
| T053 - Propel Alt 7 | 3,425 | +1,760 | 2,915 | +2,540 |

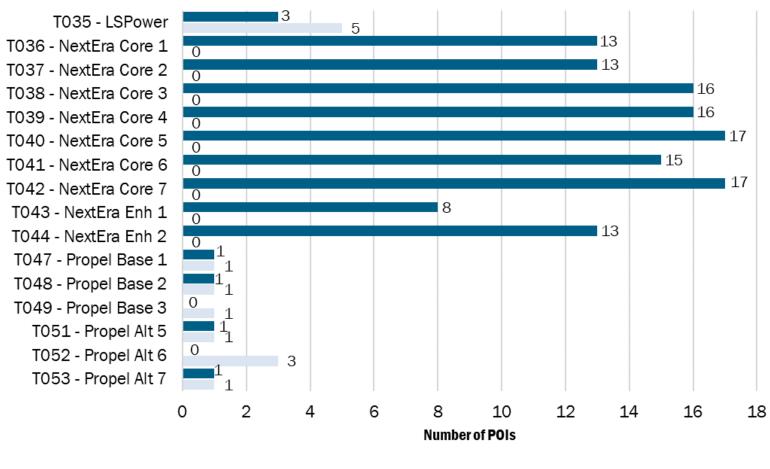


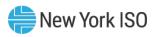
Cost per MW



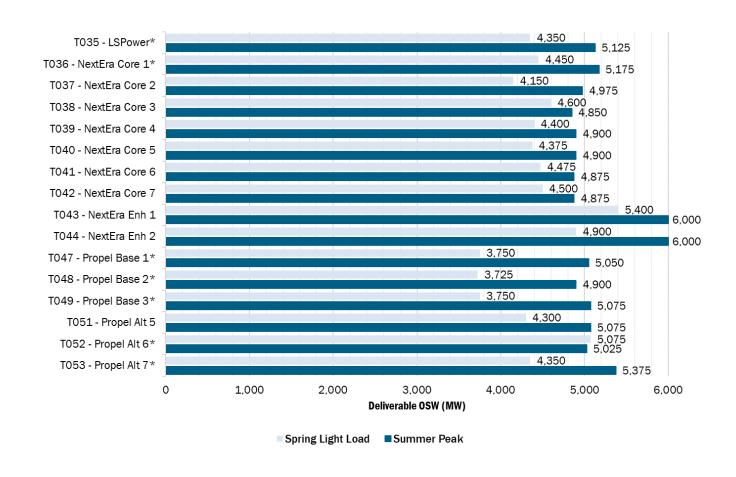


Expandability - Creation of POIs for future OSW





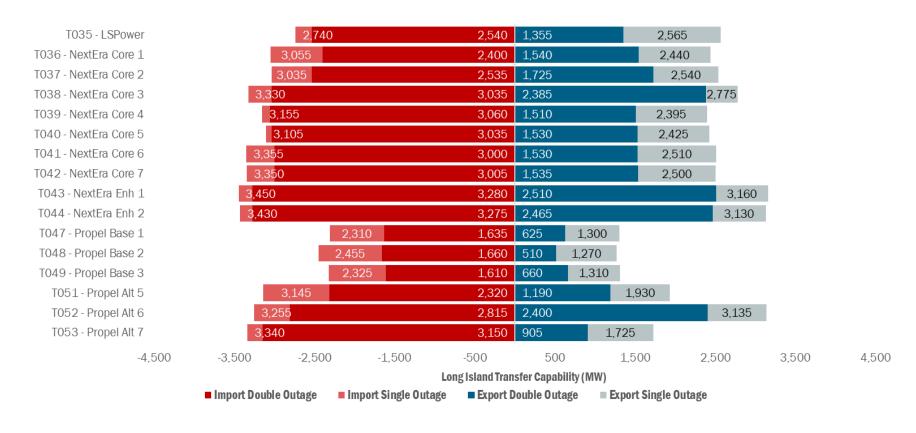
Expandability – OSW Delivery Under Outage Conditions





Operability - Flexibility for Outages

 Optimal Transfer Analysis for Long Island import and export capability under single outage (N-1-1) and double outage (N-2-1) conditions





Operability - System Strength

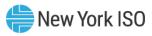
- Weighted short circuit ratio (WSCR) is a common screening method to obtain a high-level understanding of the the voltage stiffness of the grid and indirectly assess ability of inverter-based resources (IBR) to respond "as expected" to system perturbations
- WSCR calculated system outages (N-1, N-2, N-3 345 kV Long Island tie lines)
- Generally, higher WSCR indicates a stronger system
- NERC does not have a WSCR reliability criteria

| Project | WSCR w/1 Outage | WSCR w/2 Outages | WSCR w/3 Outages |
|----------------------|-----------------|------------------|------------------|
| Pre-Project | 1.83 | 1.61 | N/A |
| T035 - LS Power | 0.78 | 0.70 | N/A |
| T036 -NextEra Core 1 | 2.46 | 2.39 | 2.11 |
| T037 -NextEra Core 2 | 2.63 | 2.59 | 2.47 |
| T038 -NextEra Core 3 | 2.45 | 2.38 | 2.26 |
| T039 -NextEra Core 4 | 2.49 | 2.40 | 2.17 |
| T040 -NextEra Core 5 | 2.48 | 2.40 | 2.16 |
| T041 -NextEra Core 6 | 1.75 | 1.68 | 1.45 |
| T042 -NextEra Core 7 | 1.75 | 1.68 | 1.45 |
| T043 -NextEra Enh 1 | 1.47 | 1.44 | 1.39 |
| T044 -NextEra Enh 2 | 1.90 | 1.87 | 1.78 |
| T047 - Propel Base 1 | 2.22 | 2.11 | 1.95 |
| T048 - Propel Base 2 | 2.15 | 2.02 | 1.78 |
| T049 - Propel Base 3 | 2.19 | 2.06 | 1.87 |
| T051 - Propel Alt 5 | 2.26 | 2.17 | 2.09 |
| T052 - Propel Alt 6 | 2.50 | 2.42 | 2.31 |
| T053 - Propel Alt 7 | 1.30 | 1.21 | 1.07 |



Operability - Transmission Operations for the Future Grid

- In the NYISO's 2019 Report on "Reliability and Market Considerations for a Grid in Transition," the NYISO identified potential reliability concerns when operating under future high levels of intermittent generation with system and locational demand requirements that may be difficult to forecast in real-time operations.
 - A 100 MW transmission constraint margin is used for the existing 345 kV AC lines connecting Long Island to the rest of NYCA
 - The transmission constraint margin expected to increase to 600 MW with 3,000 MW of offshore wind connected to long Island and up to 1,000 MW with 6,000 MW
- Due to the unique nature of the Long Island system, projects would need one or more additional 345 kV AC lines connecting Long Island to the rest of NYCA to accommodate the variability associated with 6,000 MW of offshore wind connected to Long Island under line outage conditions



Property Rights & Project Schedule

- SECO reviewed, in consultation with the DPS, transmission routing studies and substation plans provided by Developers; prepared an independent estimate to construct the proposal; and identified constructability risks
- SECO and NYISO staff performed substation site visits and transmission line route walk downs to assess specific construction and permitting risks
- Identified constructability risks were considered in evaluating the proposed project's schedule, cost estimates, and expandability
- The independent duration estimates included, among other things, the anticipated time for Article VII application preparation, Article VII approval, procurement, and construction



Relative Construction, Permitting, Schedule Risks

| | Very High | | | | T043, T044 |
|-----------------------------|-----------|-----|--------------------------------------|------------------|------------|
| sk Will Occur | High | | | T037, T038, T041 | T039, T042 |
| Probability Risk Will Occur | Medium | | T053 | T036, T040 | |
| | Low | | T035, T047,T048, T049, T051, T052 | | |
| | | Low | Medium Cost and Sched | High ule Risk | Very High |

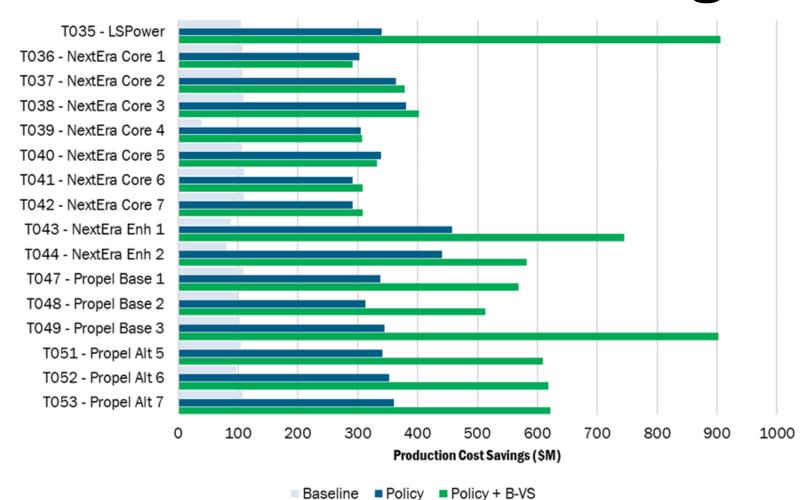


Production Cost & Performance Metrics

- Production cost metric for the Long Island PPTN assessed the economic benefits of the proposed projects by reducing generation production costs in the NYCA
- Production cost savings for a project were calculated as the difference between the pre-project and post-project results over the duration of the study period
- Performance metric for the Long Island PPTN focused on factors such as transmission utilization, offshore wind deliverability, and reduction in regional emissions



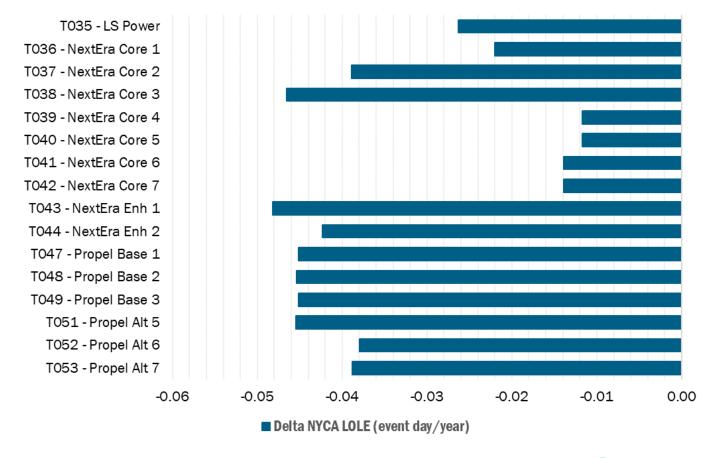
20-Year Production Cost Savings





Capacity Benefit

- NYISO calculated each project's estimated reduction in the Loss of Load Expectation (LOLE)
- The reliability improvement could result in capacity saving of \$29M - \$120M for the study year





Avoided Cost Assessment

- The NYISO investigated a new assessment for the capacity benefit metric to further analyze and distinguish projects that performed comparatively well (i.e., the top-tier projects)
- This analysis leveraged the NYISO's capacity expansion model to assess the economic benefits related to the reduction and/or deferral of future generation projects needed to meet projected future energy demand and renewable policy

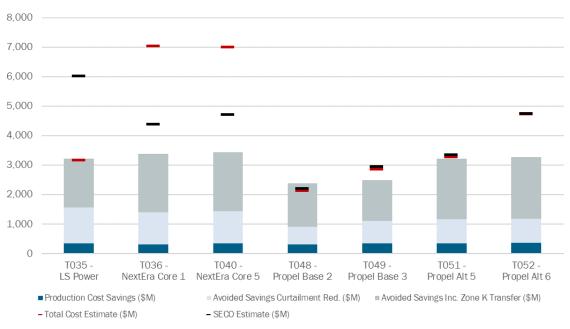
| Project | Total Capital Cost Savings (\$2022 M) | | | |
|-----------------------|---------------------------------------|------------------------|--|--|
| Project | Policy Scenario | Policy + B-VS Scenario | | |
| T035 - LSPower | 2,866 | 3,240 | | |
| T036 - NextEra Core 1 | 3,066 | 2,586 | | |
| T040 - NextEra Core 5 | 3,101 | 2,731 | | |
| T048 - Propel Base 2 | 2,065 | 2,033 | | |
| T049 - Propel Base 3 | 2,141 | 2,801 | | |
| T051 - Propel Alt 5 | 2,873 | 3,028 | | |
| T052 - Propel Alt 6 | 2,909 | 3,081 | | |

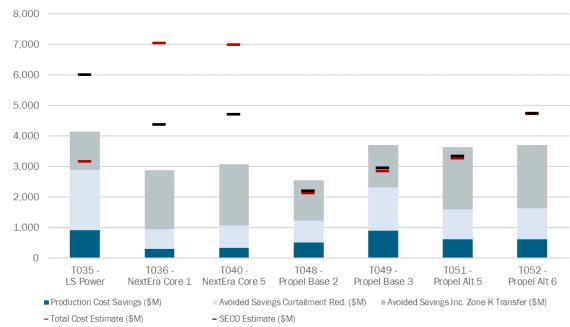


Summary of Project Cost Estimates vs. Economic Benefits (Production Cost & Avoided Cost Savings)



Policy Case + Barret - VS Constraint







Interconnection Studies

- Ongoing System Impact Studies have not identified significant adverse impacts to reliability
- Physical feasibility results have been incorporated in the evaluation of construction risks for the proposed solutions
- Network Upgrade Facilities (NUFs) have been accounted for in the independent cost estimates
- SIS report for T051 has been reviewed by the Connecting Transmission Owners and Transmission Developer and is anticipated to be presented to TPAS and OC in June 2023
- NUFs will be finalized in Facilities Studies



Other Considerations

Consequences for Other Regions

 Through the NYISO Transmission Interconnection Procedures, the NYISO consulted with the PJM and ISO-NE concerning any potential impacts due to the proposed projects, if necessary

Impact on Wholesale Electricity Markets

- NYISO staff determined there is not an adverse impact on the New York wholesale electricity markets
- The draft results were provided to Market Monitoring Unit for its review and consideration

Evaluation of Interaction with Local Transmission Owner Plans:

 The Transmission Owners' current LTPs have not identified any needs driven by a Public Policy Requirement in New York State and no further analysis is necessary



Tiered Ranking

- All proposed Public Policy Transmission Projects were evaluated based on the metrics set forth the tariff and PSC Order, to the extent compliance with such criteria and analyses were feasible
- NYISO identified a top tier of projects (listed below in numerical order) to focus on avoided cost, production cost, and operability sensitives that effectively distinguished between the higher performing projects
 - T035 LS Power
 - T036 NextEra Core 1
 - T040 NextEra Core 5
 - T048 Propel Base 2
 - T049 Propel Base 3
 - T051 Propel Alternate 5
 - T052 Propel Alternate 6



Project Ranking and Selection Recommendation

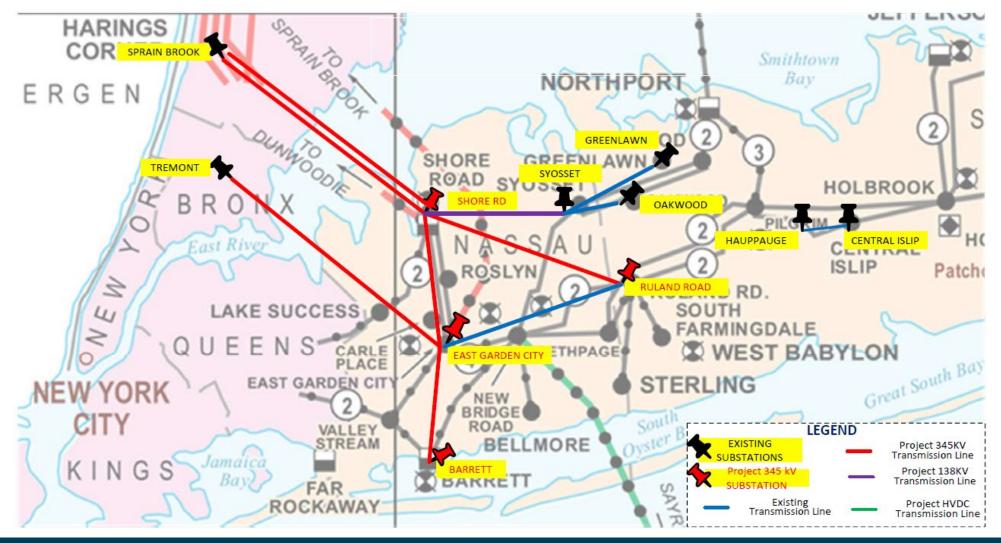


Project Ranking

| Ranking | Project ID | Developer | Project Name |
|---------|------------|-----------|----------------------|
| 1 | T051 | Propel NY | Alternate Solution 5 |
| 2 | T049 | Propel NY | Base Solution 3 |
| 3 | T052 | Propel NY | Alternate Solution 6 |
| 4 | T035 | LS Power | Atlantic Gateway |
| 5 | T048 | Propel NY | Base Solution 2 |
| 6 | T040 | NextEra | Core 5 |
| 7 | T036 | NextEra | Core 1 |
| 8 | T047 | Propel NY | Base Solution 1 |
| 9 | T053 | Propel NY | Alternate Solution 7 |
| 10 | T041 | NextEra | Core 6 |
| 11 | T037 | NextEra | Core 2 |
| 12 | T038 | NextEra | Core 3 |
| 13 | T039 | NextEra | Core 4 |
| 14 | T043 | NextEra | Enhanced 1 |
| 15 | T042 | NextEra | Core 7 |
| 16 | T044 | NextEra | Enhanced 2 |



Recommended Project Selection: T051 – Propel Alternate 5





Recommended Project Selection: T051 - Propel Alternate Solution 5

- The total calculated cost estimate is \$3,262M with a 20/80 soft Cost Cap of \$2,554M (SECO estimate for Included Capital Costs is \$2,902M)
- The project adds three new AC tie lines and a 345 kV backbone across western/central Long Island, and partially addresses congestion from Empire Wind 2
- The project provides effective operability under a variety of outage conditions, with low cost per MW for transfer capability, expandability, and operability range
- The project has relatively low procurement, permitting, and construction risks compared to other projects, reducing the potential for increases to project cost and schedule
- The Required Project In-Service Date is May 2030



Next Steps



Next Steps

- Interested parties are encouraged to submit their comments in writing regarding the Long Island Offshore Wind Export Public Policy Transmission Planning Report
 - All comments submitted to the Management Committee will be posted and forwarded to the Board of Directors
 - Comments related to the Management Committee are requested as soon as they are available but no later than June 2, 2023 if the submitter wishes that they are considered for the Board of Directors
 - Comments must be sent to <u>PublicPolicyPlanningMailbox@nyiso.com</u>
 - Comments should not contain Confidential Information or Critical Energy Infrastructure Information



Next Steps

- The Board of Directors will consider all written comments submitted to the Business Issues Committee and Management Committee
- The Board of Directors is not requesting any further presentations for Long Island Public Policy; however, they will consider requests to appear before them and make an oral presentation at the June 13, 2023 Board meeting
 - Requests to present to the Board of Directors must be sent to <u>PublicPolicyPlanningMailbox@nyiso.com</u> by 5:00 pm (EST) on June 1, 2023
 - If a request is granted, additional details will be provided



Questions?



Our Mission & Vision



Mission

Ensure power system reliability and competitive markets for New York in a clean energy future



Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

