



Long Island Offshore Wind Export PPTN: Property Rights, Routing, and Potential Construction Delays

Ross Altman
Manager, Public Policy & Interregional Planning

ESPWG/TPAS

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Agenda

- **Metrics Overview**
- **SECO Evaluation**
- **Schedule Review**
- **Risk Assessment**
- **Physical Expandability**
- **Next Steps**

Evaluation Metrics Overview

Long Island Offshore Wind Export PPTN

- **PSC Order for Public Policy Transmission Need (PPTN):**
 - CLCPA constitutes a Public Policy Requirement driving the need for transmission to increase the export capability from Long Island to the rest of New York State to ensure full output of at least 3,000 MW of offshore wind interconnected to Long Island
 - Add at least one bulk transmission intertie cable connecting between Long Island and the rest of the New York Control Area and additional transmission expansion or upgrades, as necessary
- **To pass the Viability & Sufficiency Assessment, each project must provide full output of at least 3,000 MW of offshore wind connected to Long Island under line outage conditions**
 - Also, assuming 6,000 MW of offshore wind connected to New York City to achieve the CLCPA goal of 9,000 MW by 2035

Evaluation Metrics

- Transfer Analysis & Cost per MW
- Expandability – Electrical & **Physical**
- Operability
- Production Cost
- Performance
- Capacity Benefits
- Capital Cost Estimate
- Voluntary Cost Cap
- **Property Rights & Routing**
- **Potential Construction Delays**
- Other Considerations: Metrics prescribed in PSC Order, Interconnection Studies, Consequences for Other Regions, Impact on Wholesale Electricity Markets, Integration with Local Transmission Owner Plans

*Results for metrics in red will be discussed today

SECO Evaluation

SECO Evaluation Process

- **SECO reviewed the following information from the proposals to identify common and Project specific risks:**
 - Substation Design and Property Siting
 - Cable System and Routing
 - Property Rights
 - Project Milestone Schedule and Outage Plans
 - Operational Plan

SECO Report

- **SECO's assessment focused on the following topics:**
 - Schedule
 - Cost
 - Risk
 - Resiliency
 - Physical Expandability
 - Site Control and Real Estate
 - Environmental Issues and Associated Permitting Requirements
 - Design Verifications

Schedule Review

Schedule Review

- **The main drivers to the project schedule durations considered were:**
 - Article VII licensing effort
 - Procurement of major equipment
 - Real Estate requirements
 - Construction requirements
- **SECO estimated a “Minimum Duration” calculated using the anticipated time for Article VII application preparation, the anticipated time for the Article VII approval process, and the anticipated time for construction of the project.**

Project Minimum Durations

Projects	Developer Proposed Total Duration	Estimated Minimum Duration
T035 LSPower Atlantic Gateway	70 Months	71 Months
T036 Nextera Core 1	74 Months	74 Months
T037 Nextera Core 2	88 Months	89 Months
T038 Nextera Core 3	88 Months	89 Months
T039 Nextera Core 4	88 Months	105 Months
T040 Nextera Core 5	74 Months	74 Months
T041 Nextera Core 6	74 Months	74 Months
T042 Nextera Core 7	93 Months	109 Months
T043 Nextera Enh 1	88 Months	105 Months
T044 Nextera Enh 2	93 Months	109 Months
T047 Propel NY Base 1	72 Months	77 Months
T048 Propel NY Base 2	72 Months	77 Months
T049 Propel NY Base 3	72 Months	77 Months
T051 Propel NY Alt 5	72 Months	77 Months
T052 Propel NY Alt 6	72 Months	77 Months
T053 Propel NY Alt 7	96 Months	101 Months

Risk Assessment

Notable Risks

- **There are common risks in building underground and submarine transmission in densely-populated areas. Several project-specific risks include, but are not limited to, the following:**
 - Submarine Cable Routing – Hudson River and East River
 - Cable Transition Station
 - Cable Installation In Existing Substations
 - Property Acquisition
 - Substation Expansion
 - Proposed HVDC Stations
 - Potential Flooding or Inundation by Storm Surge
 - Long Lead Time – HVDC Equipment

Submarine Cable Routing

- **Notable risks identified for cable routes in Hudson River and East River:**
 - Owner consent/consultation may be required to cross existing infrastructure (e.g., cables, pipelines, tunnels)
 - Crossing or routing in close proximity to navigation channels or anchorages will require USACE Section 408 approval
 - Avoidance and rerouting around areas of high contamination

Cable Transition Station

- **Submarine cables coming ashore are in sensitive areas such as beaches and parks – e.g., Hempstead Harbor (Long Island), Davenport Park (New Rochelle), and Edwards Blvd (Long Beach)**
- **Transition stations are expected to have significant visual impact and may be subject to public opposition**

Cable Installation Within and Approaching Existing Substations

- Installing new underground cables into the existing substations may potentially impact existing foundations, conduit/trench systems, grounding and buswork
- Installation of large number of cables may require additional or concurrent outages, complex construction sequences and/or more expensive construction methods
- Modifications may be required for routing cables through congested areas near substation
 - Routing six or more cables through Steward Avenue to the East Garden City Substation will likely be difficult

Property Acquisition

- Risks identified for sites proposed for substations at East Garden City, Eastern Queens and Ruland Road
- Sufficient land may not be available at the proposed Utility/ privately owned site for the construction of the proposed substations

Substation Expansion

- **Dunwoodie: Construction of the gas insulated substation may require relocation of three existing 345kV lines.**
- **Sprainbrook: Expansion of the 345kV substation bay to the East of the substation will require a retaining wall to accommodate the 60 - 90 feet drop-off and obtaining permits is expected to be difficult.**

Substation Expansion (continued)

- **Farragut: The proposed substation expansion into the East River will likely require additional permits/approvals**
- **Proposed design for Farragut and Jamaica substation violates Con Edison's design principles and engineering specifications**

Proposed HVDC Stations

- **Northport, Buchanan, and Barrett: Proposed station layouts do not allow sufficient space to integrate into the converter station. Subsurface contamination will likely be an issue at Northport.**
- **Northgate and Sprainbrook: Proposed sites may encounter rock during excavation which might require extensive slope protection.**

Potential Flooding or Inundation by Storm Surge

- Proposed substations located in or near a 100 year or 500 year flood zone and/or have the potential for being inundated by a Category 1 storm are identified as having a high risk of being impacted by flooding

Long Lead Time – HVDC Equipment

- Due to high demand and equipment complexities, manufacturers are quoting lead-times of up to four years for onshore HVDC converter stations
- Longer lead times to procure HVDC system will require the Developers to work with the manufacturers to mitigate potential delays in schedule

Summary of Notable Risks

	T035 LS Power	T036 NextEra Core 1	T037 NextEra Core 2	T038 NextEra Core 3	T039 NextEra Core 4	T040 NextEra Core 5	T041 NextEra Core 6	T042 NextEra Core 7	T043 NextEra Enh 1	T044 NextEra Enh 2	T047 Propel Base 1	T048 Propel Base 2	T049 Propel Base 3	T051 Propel Alt 5	T052 Propel Alt 6	T053 Propel Alt 7
Submarine Cable Routing - Hudson River					X			X	X	X						
Submarine Cable Routing - East River					X				X	X	X	X	X	X	X	X
Cable Transition Substation - Hempstead Harbor, Davenport Park		X	X	X	X	X	X	X	X	X						
Cable Transition Substation - JFK Marine and Park Parking					X				X	X						
Cable Transition Substation - Edwards Blvd Long Beach									X							
Cable Transition Substation - Steam Boat Waterfront Parking Lot									X	X						
Routing In Congested Areas - East Garden City (Steward Avenue)		X	X	X	X	X	X	X	X	X						
Cable Installation In Existing Substations		X	X	X	X	X	X	X	X	X						
Long Lead Time - HVDC Equipment	X						X	X	X	X						X
Potential Flooding or Inundation by Storm Surge		X	X	X	X	X	X	X	X	X						

Summary of Notable Risks

	T035 LS Power	T036 NextEra Core 1	T037 NextEra Core 2	T038 NextEra Core 3	T039 NextEra Core 4	T040 NextEra Core 5	T041 NextEra Core 6	T042 NextEra Core 7	T043 NextEra Enh 1	T044 NextEra Enh 2	T047 Propel Base 1	T048 Propel Base 2	T049 Propel Base 3	T051 Propel Alt 5	T052 Propel Alt 6	T053 Propel Alt 7
Property Acquisition - East Garden City		X	X	X	X	X	X	X	X	X	X		X	X	X	
Property Acquisition - Eastern Queens															X	X
Property Acquisition - Ruland Road	X															
Proposed HVDC Stations – Northport (Space Constraints)							X	X	X	X						
Proposed HVDC Stations – Barrett									X							
Proposed HVDC Stations – Buchanan								X		X						
Proposed HVDC Station – Northport																X
Substation expansion – Dunwoodie, Sprainbrook		X	X	X	X	X	X	X	X	X						
Substation expansion – Jamaica		X	X	X	X	X	X	X	X	X						
Substation expansion – Farragut			X	X	X			X	X	X						
Subsurface condition – Sprainbrook HVDC/ Northgate	x						X	x	x	x						X

Ongoing Risk Considerations

- Empire Wind II Interconnection
- Proposed Outage Plans
- System Impact Study Results
- Additional Site Visits

Physical Expandability

Physical Expandability

- **Open breaker positions with major equipment included in the proposal (e.g. breaker and buswork) are considered “Created Point of Interconnection (“POI”)”**
- **Open positions which may be created by the installation of breakers in the future (e.g. breakers indicated as future builds in the proposal) are considered “Expandable POIs”**

Physical Expandability

Projects	Created POIs	Expandable POIs
T035 - LS Power	3	5
T036 - NextEra Core1	13	0
T037 - NextEra Core 2	13	0
T038 - NextEra Core 3	16	0
T039 - NextEra Core 4	16	0
T040 - NextEra Core 5	17	0
T041 - NextEra Core 6	15	0
T042 - NextEra Core 7*	17	0
T043 - NextEra Enh 1	8	0
T044 - NextEra Enh 2*	13	0
T047 - Propel Base 1	1	1
T048 - Propel Base 2	1	1
T049 - Propel Base 3	0	1
T051 - Propel Alt 5	1	1
T052 - Propel Alt 6	0	3
T053 - Propel Alt 7	1	1

*Project proposes two (2) 1200MW HVDC connection from Offshore Platforms in the Hudson South Lease area up the Hudson River to the proposed Buchanan substation

Next Steps

Results Review Schedule

- **March 2: Review potential construction delays, property rights & routing**
- **March ESPWG: Capital cost estimates and results follow-up**
- **April TPAS/ESPWG: Initial report review**

Comments

- **Further questions and comments regarding these results can be sent to PublicPolicyPlanningMailbox@nyiso.com**
 - Comments are requested as soon as they are available, but no later than March 9, 2023
- **Comments will be posted for stakeholder consideration**

Questions?