

Long Island Offshore Wind Export PPTN: Evaluation Assumptions

Ross Altman

Manager, Public Policy & Interregional Planning

ESPWG/TPAS

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Agenda

- **Overview of Comparative Evaluation**
- **Power Flow Assumptions**
- **Market Impact Assumptions**
- **Other Considerations & Next Steps**

Overview of Comparative Evaluation

Criteria and Metrics

Per Section 31.4.8.1 of Attachment Y to the NYISO OATT, NYISO will consider the following criteria and metrics:

capital cost estimate, voluntary cost cap, cost per MW ratio, expandability, operability, performance, production cost, property rights and routing, potential construction delays, and other metrics applicable to of the Public Policy Requirement to achieve the Climate Leadership and Community Protection Act (CLCPA) targets

Overview of Comparative Evaluation

- Present assumptions for comparative evaluation
- Solicit feedback on assumptions from stakeholders
- Both baseline and scenarios will be considered

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
- Production cost: used in evaluating metrics, such as production cost savings, emission, LBMP, load payment, and performance
- Independent consultant (SECo) databases: used in evaluating metrics, such as overnight capital cost, schedules, property rights, and expandability

Power Flow Assumptions

Power Flow Cases

- **Based on the Viability & Sufficiency Assessment Baseline and Alternate Cases**
- **Over 8,000 MW conventional generation in Zone J and over 3,000 MW conventional generation in Zone K available**
- **Certain units dispatched in Zones J & K for local reliability needs**

Power Flow Cases: Generation & Load

	Zone J		Zone K	
	Summer Peak	Light Load	Summer Peak	Light Load
Load (MW net)	11,195 (including 290 MW BTM solar)	4,524 (including 644 MW BTM solar)	4,423 (including 499 MW BTM solar)	1,107 (including 1,108 MW BTM solar)
Conventional Generation Dispatch (Pgen MW)	~2,100	~900	~2,000	~500
Conventional Reserve (Pmax - Pgen MW of committed units)	~2,400	~2,400	~900	~400
Total Conventional Generation Available (Pmax)	>8,000	>8,000	>3,000	>3,000

Power Flow Cases: Imports and Transmission Projects

■ LIPA Imports

- ISO-NE: Northport-Norwalk = 0, Cross Sound Cable = 0
- PJM: Neptune = 660 MW (0 MW import in light load)

■ LIPA-NY tie lines

- Jamaica 138 kV ties (901/903) = 300 MW to Zone J
- Sprain Brook-East Garden City 345 kV (Y49) reverses flow to inject power into Zone I

■ NYC Imports

- 1,310 MW generic HVDC injection @ Rainey 345 kV (0 MW import in light load)

■ LI and NYC LTP updates included in FERC 715

Power Flow Cases: Offshore Wind Assumptions

- **~3,000 MW in Zone K at full output in Baseline Case:**
 - LIPA/NYSERDA Awarded: 139 MW @ East Hampton 69 kV, 880 MW @ Holbrook 138 kV, 1,260 MW @ Barrett 138 kV
 - Non-Awarded: 800 MW @ Ruland Rd. 138 kV
- **~6,000 MW in Zone K at full output in Alternate Case:**
 - LIPA/NYSERDA Awarded: 139 MW @ East Hampton 69 kV, 1,050 MW @ Holbrook 138 kV, 1,350 MW @ Barrett 138 kV
 - Non-Awarded: 1,150 MW each @ Ruland Rd. 138 kV, East Garden City 345 kV, Northport 138 kV
- **~6,000 MW in Zone J at full output:**
 - NYSEERDA Awarded: 816 MW @ Gowanus 345 kV, 1,230 MW @ Astoria 138 kV
 - Non-Awarded: 1,310 MW each @ Farragut East 345 kV, Farragut West 345 kV, and West 49th St. 345 kV

Transfer Limit

- **Incremental transfer limit is performed to determine a project's impact on Long Island import and export capability**
 - Consistent with planning methodology for N-1 normal transfer criteria
 - For the purpose of understanding system behavior in this analysis, flows on project tie lines are included in transfer limit calculation. These results do indicate how the future interface will be defined.
 - Controllable lines are adjusted for increased transfers
- **Transfer Analysis cases use CY21 ATBA transfer cases with Long Island and NYC OSW injections from the Alternate Case**
- **Additional interfaces are studied in the System Impact Studies and internal LIPA transfer limits is considered under operability**

Electrical Expandability

- **Considers a project's ability to export excess OSW power beyond the PSC Order's minimum level of 3,000 MW**
- **N-0, N-1, and N-1-1 analysis is performed on the Alternate Case**
 - Consideration is given for OSW distribution different than the Alternate Case

Operability

- **Operating reserves calculated using N-1-1 optimal transfer analysis consistent with NYISO operations methodology**
- **Flexibility in operating the system with each project will be compared by modeling varying system conditions**
- **Local operability will assess flexibility of the underlying LIPA system, among other things**
- **Other considerations: resiliency in project design, short circuit strength, outage schedules**

Market Impact Assumptions

Market Impacts

- The OATT requires the NYISO to assess the PPTN projects' impacts to NYISO-administered wholesale electricity markets.
- The PPTN projects' impacts to NYISO-administered wholesale electricity markets are being assessed via production cost savings and capacity benefits.
- 20 year calculation (from a common project in-service date) comparing cost savings, emissions, and other system conditions of cases with and without each project
- Overall similar approach to AC Transmission by leveraging recent study databases
 - MAPS simulations to calculate production cost simulations
 - MARS simulations to calculate benefit of LCR and IRM changes due to transmission project topology change
- Given the uncertainty of resource and market conditions over a 30-year period, these results can only be used for comparative purposes and cannot be used as a predictor of long-term energy and capacity market prices

Production Cost and Capacity Benefit Cases

■ 2 Study Cases

• Baseline Case

- Outlook Contract Case as starting points for production cost database
- RNA base case as starting points for capacity benefit database
- Gold Book base forecast
- NYSERDA REC and OREC awards, but not Tier 4
- 6 GW OSW in NYC, 3 GW OSW in LI

• Policy Case

- Outlook Policy Case S2 as starting points for production cost database
- RNA 70x30 case as starting points for capacity benefit database
- Consistent with Climate Action Council forecast
- Tier 4 projects, NYSERDA awards, and Outlook capacity expansion assumptions
- 6 GW OSW in NYC, 6 GW OSW in LI

■ **Incremental study years will be modeled with results extrapolated to calculate 20-year impacts**

■ **Limited scenarios will be considered, as necessary**

MAPS and MARS Databases

- **Details on the assumptions can be found in the Data Matrices in the 2021-2040 System & Resource Outlook and 2022 RNA report appendices:**
 - <https://www.nyiso.com/documents/20142/33384099/2021-2040-Outlook-Report.pdf>
 - <https://www.nyiso.com/documents/20142/33395392/2021-2040-System-Resource-Outlook-Appendix.pdf>
 - https://www.nyiso.com/documents/20142/33686351/06b_2022RNA_Draft5Report_forOct13OC-v2posting.pdf
 - https://www.nyiso.com/documents/20142/33686351/06c_2022RNA_Draft4Appendices_forOctOC_v2posting.pdf

Other Considerations & Next Steps

Other Metrics

- **Other metrics, such as capital cost, cost cap, property rights, siting, and construction schedule, are evaluated using a variety of non-simulation inputs based on industry standards, equipment quotes, site visits, recent transmission development, etc.**
- **Network Upgrade Facilities and other results from System Impact Studies are included in the evaluation**

Next Steps

- Further questions and comments regarding the assumptions and scenarios can be sent to PublicPolicyPlanningMailbox@nyiso.com
 - Comments are requested as soon as they are available, but no later than November 7, 2022
- The NYISO tentatively plans to provide the draft results in Q1 2023

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