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*Via E-mail*

**Re: Long Island Public Policy Transmission Need Power Flow Results**

NextEra Energy Transmission New York, Inc. (NEETNY) appreciates the opportunity to provide additional input and request clarifications on the powerflow results shared by NYISO related to the proposals submitted in responses to the Long Island Public Policy Transmission Need ("LI PPTN") solicitation.

As set forth more fully below, NEETNY offers comments and requests clarifications on each of the four metrics (1) Transfer Capability, (2) Electrical Expandability, (3) Operability, and (4) Grid Strength that NYISO identified as part of its powerflow analysis.

**I. NEETNY agrees that the Transfer Capability and Electrical Expandability metrics are appropriate, but a more robust analysis should be performed by NYISO**

- A. Transmission Developers have insufficient information to fully review the Transfer Capability and Electrical Expandability powerflow results provided by NYISO.

NYISO has provided limited information on its Transfer Capability and Electrical Expandability results and therefore NEETNY requests NYISO to provide additional information that identifies the limiting constraints, contingencies, OSW POI amounts and curtailment, as well as LI tie-line PAR and HVDC schedules for the Transfer Capability and Electrical Expandability analysis. This will allow NEETNY, and other stakeholders, to more fully review the powerflow results regarding these two metrics and provide more in-depth feedback and comments.

- B. NEETNY requests NYISO to consider an alternative Phase Angle Regulator ("PAR") schedule for its Transfer Capability and Electrical Expandability analysis of NEETNY proposals.

NEETNY is unclear how NYISO scheduled existing and new project-specific PARs in its Transfer Capability and Electrical Expandability analysis. Therefore, NEETNY requests additional information on the PAR schedules utilized for each proposal by NYISO in its import, export, and OSW capability analysis.

NEETNY requests NYISO to evaluate new PARs located on Long Island to New York City tie-lines at a schedule of 830 MW in the export direction for its LI Export and OSW capability analyses if NYISO used a different PAR schedule for NEETNY's proposals.

- C. NYISO's evaluation of Transfer Capability and Electrical Expandability appears to be overly restricted to Long Island transmission facilities and fails to also consider benefits that solutions provide to New York City and the rest of New York.

Pursuant to the Climate Leadership and Community Protection Act ("CLCPA"), at least 70% of New York's electricity must come from renewable energy sources by 2030 with the development of a minimum 9,000 megawatts of offshore wind ("OSW") energy by 2035. In order to achieve, and potentially exceed these targets, New York will require a significant increase in OSW in both Long Island and New York City. NYISO has recognized this by incorporating 6,000 MW of OSW in NYC in the models used to perform its analysis.

While NYISO has included 6,000 MW of OSW in NYC, NYISO's analysis of Transfer Capability and Electrical Expandability seemingly only focuses on limitations to OSW delivery based on transmission facilities located in Long Island. This provides an incomplete picture of the benefits offered by different proposals in two key areas:

- 1) NYISO's stated methodology fails to account for deliverability limitations for transmission facilities located in New York City when attempting to deliver energy from OSW in Long Island to the rest of New York, and
- 2) It fails to account for the ability of a proposal to support increased OSW in New York City to achieve the overall CLCPA objectives.

Many of the proposals fully and electrically integrate Long Island and New York City (some proposals more than others), which makes bifurcating Electrical Expandability between the two geographic areas an ineffective approach. Additionally, this methodology fails to identify very real, long-term benefits some proposals provide to customers over others.

- D. NYISO should examine several scenarios with varied OSW injection locations across Long Island to determine the true electrical expandability of each proposal.

NYISO has noted that the LI PPTN, as compared to previous Public Policy Transmission Need solicitations, is "unique" because it is intended "to unbundle resources that are not yet on the system."<sup>1</sup> As a result, the specific interconnection locations on Long Island face a high degree of uncertainty that demands a flexible solution. Specifically, a proposal that performs strongly across a variety of OSW injection locations can significantly reduce costs for New York customers by hedging against interconnection uncertainty and supporting greater transmission access for OSW developers which reduces in-service delays while also increasing competition.

NYISO's current Electrical Expandability metric only focuses on the respective "optimized" OSW capability of each solution. It is not clear if the "optimized" capability considers:

- 1) The total cost for OSW developers to interconnect to each of the POIs
- 2) Differences in preferred injection locations for geographically disparate BOEM lease areas (and, thereby, the ability of a proposal to increase competition by providing more flexibility in OSW capability across a wider range of POIs)

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<sup>1</sup> "Long Island Offshore Wind Export PPTN: Evaluation Metrics" ESPWG Presentation, July 2022

- 3) The likelihood of discrete injection amounts at 1,000 MW or greater consistent with HVDC pursuant to NYSERDA's 2022 OSW Solicitation<sup>2</sup>.

As previously submitted, NEETNY believes consideration of these metrics are critical to identifying the most cost-effective and efficient transmission solution to achieve New York's Offshore Wind goals. NEETNY recommends that NYISO evaluate proposals across two to three consistent POI injection locations in order to truly gauge Electrical Expandability. This powerflow analysis can be performed quickly and easily and can provide more insight to compare the benefits of each proposal.

- E. NYISO should evaluate alternate POIs on Long Island beyond Barrett, Ruland, East Garden City, and Northport for optimizing the Electrical Expandability of solutions.

Consistent with NEETNY's comments provided on November 7<sup>th</sup>, 2022 in response to NYISO's request for comments on the evaluation methodology, NEETNY submits that LI PPTN transmission developers should be able to incorporate OSW injection locations different than those included in NYISO's 6 GW Alternate case that may be unique to the design of the developer's proposal and could provide substantive benefits to Long Island and New York customers.

Specifically, several of NEETNY's solutions include an expandable and highly deliverable injection location at a newly created station near Valley Stream that can reduce interconnection costs for OSW developers and significantly improve OSW capability. NYISO has currently optimized other proposals using injection locations included in their 6 GW Alternate scenario that "do not indicate any specific knowledge of development plans" of OSW developers and has previously recognized that "[other] scenarios, including different offshore wind POIs and sizes, may also be used in the evaluation and selection phase."<sup>3</sup> Therefore, NYISO should allow optimization of Electrical Expandability that considers Valley Stream as a potential POI for NEETNY solutions.

## **II. NEETNY agrees that the range of transfer capability, under contingency, is an effective metric to capture the relative Operability of different proposals**

NEETNY agrees with NYISO's "Operability" metric that considers the range of transfer capabilities that each proposal provides, under N-1 and N-2 outage conditions. Long Island is undergoing an unprecedented shift change to its generation and transmission make-up and, therefore, operational flexibility will be essential to serve Long Island and New York customers reliably and economically.

The ability of the transmission system to accommodate high transfers of power into and out of Long Island will be a key component of the operational flexibility required by enabling access to operating reserves, reducing the need to cycle or re-dispatch generation, and enabling the reliable delivery of power during extreme weather and/or transmission outages.

## **III. NEETNY agrees that Grid Strength is an important metric for assessing the reliability and viability of respective proposals for integrating OSW into Long Island**

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<sup>2</sup> <https://www.nyserdera.ny.gov/offshore-wind-2022-solicitation>

<sup>3</sup> NYISO Long Island Offshore Wind Export Public Policy Transmission Need FAQ, Question 42, August 11, 2021

NEETNY agrees that Grid Strength is an imperative consideration in assessing the viability of different proposals to be able to reliably deliver OSW from Long Island. Inverter-Based Resources and HVDC converter stations rely on an adequate grid strength (relative to the size of the resource) for synchronizing the power electronics, and insufficient grid strength can lead to curtailment and voltage or control instability, heavily impacting the performance and reliability of the system. NYISO's metric selection, Weighted Short Circuit Ratio, is a reasonable metric for assessing Grid Strength<sup>4</sup>.

However, no Grid Strength metric is perfect when assessing the viability of multiple proposals with different POIs and transmission topology. Specifically, in NERC's Reliability Guideline on "Integrating Inverter-Based Resources into Low Short Circuit Strength Systems," Weighted Short Circuit Ratio is based on the assumption of "strong electrical coupling between non-synchronous generation plants. This is equivalent to assuming that all non-synchronous generation plants are connected to a virtual POI. In practice, there is usually some electrical distance between each non-synchronous generation plant's POI, and the non-synchronous generation plants will not fully interact with each other." Therefore, it is likely that the Weighted Short Circuit Ratio can overestimate risk for proposals with more electrical diversity in both OSW POIs and transmission topology, thus leading to the metric providing a very accurate risk assessment for those proposals with large amounts of OSW or HVDC connecting at one location.

- Additionally, NYISO should assess the Grid Strength for the 6,000 MW of OSW assumed to be interconnected into NYC and identify potential benefits, if any, that each proposal can provide beyond Long Island.
- NEETNY also requests clarification on whether NYISO's Weighted Short Circuit Ratio calculation assumed that all OSW was connected to the grid via AC lines, or did it account for the fact that some of these will be connected via HVDC pursuant to NYSERDA's 2022 OSW Solicitation<sup>5</sup>.

NEETNY appreciates the opportunity to continue to offer input into NYISO's evaluation of the LI PPTN proposals to help ensure the long-term benefits of each LI PPTN proposal to Long Island and the rest of New York are fully considered. NEETNY also looks forward to future opportunities to provide input as NYISO further details its evaluation assumptions and analysis.

Sincerely,

**Andrew Taylor**  
Executive Director  
Transmission Development

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<sup>4</sup> [https://www.nerc.com/comm/RSTC\\_Reliability\\_Guidelines/Item\\_4a\\_Integrating%20Inverter-Based\\_Resources\\_into\\_Low\\_Short\\_Circuit\\_Strength\\_Systems\\_-\\_2017-11-08-FINAL.pdf](https://www.nerc.com/comm/RSTC_Reliability_Guidelines/Item_4a_Integrating%20Inverter-Based_Resources_into_Low_Short_Circuit_Strength_Systems_-_2017-11-08-FINAL.pdf)

<sup>5</sup> <https://www.nyserda.ny.gov/offshore-wind-2022-solicitation>