

March 31st, 2023

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Via E-mail

Re: Long Island Public Policy Transmission Need Barrett – Valley Stream Scenario

NextEra Energy Transmission New York, Inc. (NEETNY) appreciates the opportunity to provide additional input and request clarifications on the Barrett – Valley Stream Scenario results and assumptions 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 the following:

I. NYISO’s direction to not address overloads on the Barrett 138 kV circuits should not unfairly disadvantage Transmission Developers who adhered to that guidance.

In NYISO’s LI PPTN solicitation¹, NYISO specified that “constraints do not need to be resolved for facilities that are ... **anticipated** to be upgraded by offshore wind developers per NYSERDA’s Offshore Wind Renewable Energy Credit Purchase and Sale Agreement’s – specifically, the 138 kV circuits between Barrett and New Bridge Rd, and between Barrett and Valley Stream.”

NYISO provided guidance to developers that upgrades were anticipated to address constraints identified on the Barrett 138 kV circuits. At the time, this guidance was appropriate to (1) provide clarity on how Transmission Developers should design solutions, knowing that proposals cannot be modified once submitted and (2) to prevent duplicative transmission upgrades addressing the constraints on the 138 kV circuits between Barrett and New Bridge Road and between Barrett and Valley Stream. Had NYISO provided more open-ended guidance, such as “developers may choose to address constraints that may be upgraded by offshore wind developers” – such guidance also would have been appropriate as it would have provided clarity on what transmission developers could do and how proposals may be evaluated.

However, Empire Wind II declined to pursue network upgrades to address the Barrett 138 kV circuits well after the due date of the LI PPTN solicitation. Based on NYISO’s guidance on anticipated upgrades, most developers’ proposals did not seek to fully address the Barrett 138 kV constraints. Developers that adhered to NYISO’s guidance should not be unfairly penalized. NYISO’s current proposed Barret – Valley Stream Scenario defines the benefits associated with relieving the Barret 138 kV circuits based upon curtailment, production-cost benefits, and avoided

¹ Long Island Offshore Wind Export Public Policy Transmission Need Project Solicitation, August 12, 2021

cost benefits. Applying these metrics to this Scenario can significantly overestimate the true benefit of a proposal that mitigates these constraints versus one that does not – particularly because the cost of transmission upgrades needed to mitigate the constraints does not outweigh the increase in production-costs and capacity costs when left unmitigated. Therefore, NEETNY believes the more appropriate metric is to define the costs of the upgrades needed to mitigate the Barrett 138 kV circuit constraints appropriate for each LI PPTN proposal.

As such NEETNY believes NYISO should not weigh its Barrett – Valley Stream Scenario (that includes the Barrett 138 kV constraints) in the selection of the preferred LI PPTN solution since it would unfairly disadvantage Transmission Developers participating in the LI PPTN who adhered to the guidance in the solicitation.

II. NYISO’s modeling of the Barrett – Valley Stream Scenario does not appear to be consistent with the expected interconnection configuration of Empire Wind II and the approved SUFs at the Liotta Substation.

NEETNY requests clarification on how Empire Wind II and the approved SUFs were modeled in the Barrett – Valley Stream Scenario, both in the base case and for each LI PPTN proposal.

In order to accurately assess the expected curtailment levels associated with Empire Wind II based on approved SUFs, NEETNY would expect NYISO to model Empire Wind II interconnecting to Liotta substation for all proposals as shown in Figure 1 below. The left diagram represents the model NEETNY believes NYISO is using in their production-cost simulation compared the right diagram where the Empire Wind II OSW generation is modeled at the updated Liotta 138 kV substation, consistent with the approved SUFs:

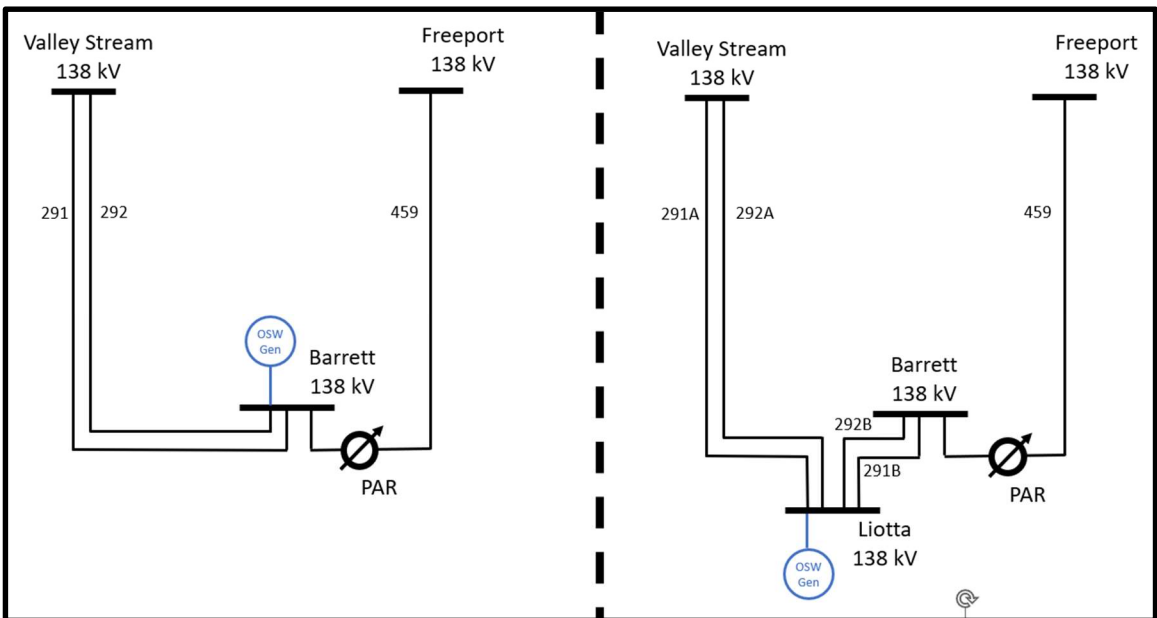


Figure 1: Empire Wind II Network Modeling

Since upgrades of the transmission lines from Liotta substation – Barrett 138 kV were not accepted as part of the approved SUF upgrades, and because no LI PPTN solution addressed these limiting elements, all LI PPTN proposals can expect significant curtailment due to these facilities without adjustments to the Point of Interconnection (“POI”) or additional network facilities upgrades. This curtailment is primarily driven by the loss on 138 kV lines out of the Liotta station resulting in overloads on the remaining 138 kV lines emanating from Liotta.

III. In order to appropriately evaluate the Barrett 138 kV circuit congestion issue, NYISO should identify the cost of supplemental network facilities needed to address the congestion.

In previous PPTNs, the New York Public Service Commission (PSC) was able to identify upgrades needed to address congestion issues beyond the primary scope of the PPTN.

- During the AC Transmission PPTN, the PSC identified facilities at the beginning of the solicitation process as additional upgrades and did not use the upgrades as a distinguishing factor in the selection process. “All Segment B projects include the common upgrades required by the PSC in its December 2015 Order, which ordered Orange and Rockland Utilities, Inc. (O&R) and Central Hudson Gas and Electric Corporation (Central Hudson), respectively, to upgrade the Shoemaker to Sugarloaf 138 kV facilities and the terminal upgrades at Rock Tavern 345 kV Substation. These projects were not considered by the NYISO as a distinguishing factor in selecting among proposed projects. Below is a brief summary of the key design differences and the highlighted evaluation results for each of the six Segment B projects.”²
- During the Western New York PPTN, the PSC identified the facilities to be addressed by the PPTN selected after proposals from Transmission Developers had been submitted. “To realize the full capability of the viable and sufficient projects and fulfill the objectives of the Western New York PPTN ... the NYISO recommends mitigation of the Niagara – Packard 115 kV #193 and #194 line overloads by reconductoring the lines or modification of the Niagara substation configuration, and the NYISO recommends the replacement of limiting terminal equipment for the line #54 at the Gardenville 115 kV station.”³

NYISO could take a similar approach for the LI PPTN solicitation with the following process:

- 1) Request, as part of an RFI, what network facilities Transmission Developers anticipate would be needed to address the congestion associated with the Barrett 138 kV circuits.
- 2) As part of the LI PPTN evaluation process, NYISO can verify that the network facilities address the Barrett 138 kV circuit congestion limitations and can be included in the Base and Policy Scenarios as appropriate
- 3) NYISO can either add the costs of any supplemental network facilities to the cost of the Transmission Developer proposals, or alternatively assign a benefit to proposals that do not require supplemental network facilities
- 4) NYISO could then recommend these upgrades based on sensitivities conducted under the PPTN to the PSC for their approval

² NYISO AC Transmission Public Policy Transmission Plan Report, April 8, 2019

³ NYISO WNY PPTN Public Policy Transmission Planning Report, October 17, 2017

NEETNY has previously provided NYISO with the supplemental network facilities it recommends to fully address the congestion associated with the Barrett 138 kV circuits for its proposals⁴. Specifically, NEETNY identified the following network facilities:

- New Barrett 345 kV station, three 345/138 kV transformers and 138 kV PARs
- Two new Barrett – Valley Stream 345 kV lines (~4.5 miles)

Based upon a review of SECO’s cost estimates, these network facilities can be expected to cost approximately \$190M.

NEETNY has also performed detailed production-cost analysis to affirm that either the addition of these network facilities (or relocating the Empire Wind II POI to Valley Stream 345 kV as suggested in previous NEETNY comments), fully addresses the congestion associated with the Barrett 138 kV circuits.

Applying this approach would not require additional production-cost studies from NYISO since the initial studies by NYISO ignored the constraints on these circuits. However, NYISO would now be able to assign additional costs to proposals that did not address the Barrett 138 kV constraints. In contrast, proposals that addressed the Barrett 138 kV constraint would receive the benefit of having no additional costs added to their project.

To further illustrate the importance in considering the cost of upgrades in comparing proposals, consider the production-cost results provided by NYISO for the Policy Scenario (with Barrett 138 kV constraints excluded) and the Barrett – Valley Stream Scenario in Table 1 below.

Production-Cost Savings (NPV) by Scenario	T035	T040	Delta
Policy	\$340M	\$339M	+\$1M
Barrett – Valley Stream Scenario	\$906M	\$332M	+\$574M

Table 1: NYISO Production-Cost Savings Comparison

Proposals T035 and T040 provide nearly identical production-cost savings in the Policy Scenario, but in the Barrett – Valley Stream Scenario T035 provides \$574M more savings. However, this relative economic benefit of T035 in the Barrett – Valley Stream Scenario is significantly overestimated because T040 can alternatively mitigate the constraints causing the congestion for only \$190M in transmission upgrades. Therefore, the more appropriate methodology would be to consider both proposals based on the Policy Scenario and assign an additional cost to T040 of \$190M.

IV. If NYISO does not consider the additional NYC constraints previously provided by NEETNY for NYISO to include in their production-cost model, the production-cost savings for each proposal is not accurately captured since it omits applicable constraints in NYC.

NEETNY submitted comments to NYISO with a detailed list of NYC constraints that should be included in NYISO’s production-cost model for evaluation purposes on March 9, 2023. Significant changes to topology, such as the case with the proposed LI PPTN projects, can have a large impact

⁴ Transmission Developer Proposal Presentation to NYISO, July 2022

affecting power flows in highly networked areas such as the NYC transmission system. The power flow changes in NYC requires adding new constraints to the production-cost model to accurately capture congestion resulting from the proposals' topology changes. The list of supplemental NYC constraints has a significant impact on congestion and subsequently the production-cost savings for some LI PPTN proposals.

NEETNY performed a production-cost simulation sensitivity with and without the NYC constraints submitted and reviewed the top 20 constraints in terms of congestion rent across multiple proposals. For some proposals like T036 and T040, the NYC constraints contributed only 4% and 5%, respectively, of the proposal's top congestion; but for other proposals like T048 and T049, the NYC constraints contribute substantially at 89% and 97%, respectively. Figure 2 below shows the significant production-cost savings impact for proposals with a large proportion of NYC constraints from those sensitivity runs in 2035, from including the supplemental list of NYC constraints submitted to secure applicable constraints captured by NYISO's Security Constrained Dispatch (SCD). For proposals where NYC constraints contribute a low portion of congestion rent, there is minimal production-cost savings impact.

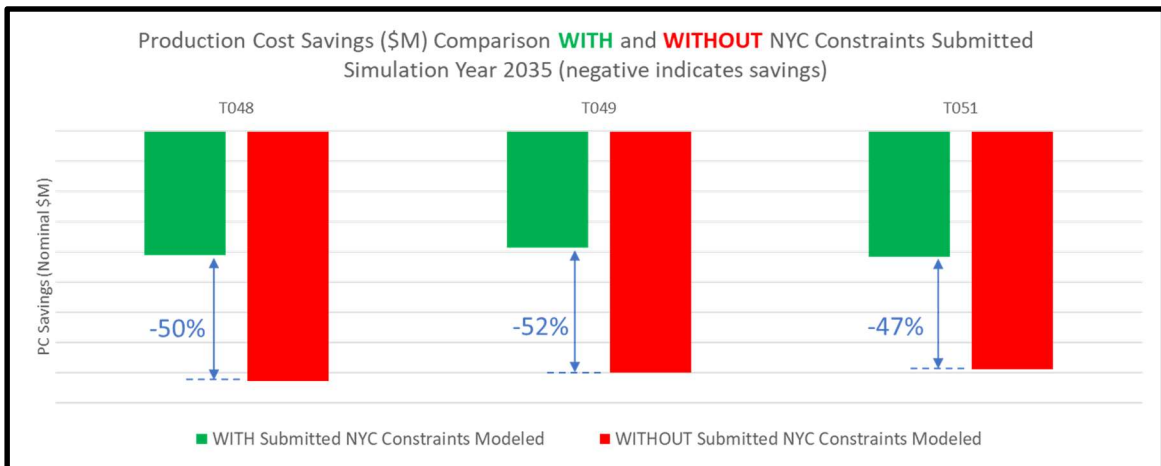


Figure 2: Production-Cost Savings Impact from Including Applicable NYC Constraints

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 and appropriately 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