

Appendix D: Frequently Asked Questions

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

DRAFT for May 31, 2023, MC

DRAFT – FOR DISCUSSION PURPOSES ONLY

Introduction

In response to the order issued by New York State Public Service Commission (“PSC”) on March 19, 2021, the NYISO anticipates soliciting Public Policy Transmission Projects and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN) for evaluation in the NYISO’s Public Policy Transmission Planning Process.

The NYISO held a Technical Conference with Developers and other interested parties on July 8, 2021. This frequently-asked-questions (FAQ) document summarizes questions that were received after or that were not fully addressed during the Technical Conference. The document is divided into two sections: (1) detailed questions on the assumptions and results of the Viability & Sufficiency Analysis (VSA) Baseline Analysis, and (2) general questions.

This document was revised on September 20, 2021 to correct a tariff citation in Q53.

Key References

NYISO point of contact for the Public Policy Transmission Planning Process:

PublicPolicyPlanningMailbox@nyiso.com

Baseline Results:

https://www.nyiso.com/documents/20142/22792555/LI_PPTN_BaselineResults.xlsx/f5828b2c-7855-49a2-bcd5-997f5a4f452c

Technical Conference Presentation:

<https://www.nyiso.com/documents/20142/22968753/LI-PPTN-TechConference.pdf/c9ab8cbb-9104-b145-3b43-d5b0de929114>

Planning Manuals: <https://www.nyiso.com/manuals-tech-bulletins-user-guides>

- Public Policy Transmission Planning Process Manual and attachments
- Transmission Expansion & Interconnection Manual
- Economic Planning Process Manual

Planning Reports:

- AC Transmission Public Policy Planning Report_
<https://www.nyiso.com/documents/20142/5990681/AC-Transmission-Public-Policy-Transmission-Plan-2019-04-08.pdf/23cbba74-a65e-66c2-708e-eaa0afc9f789>
<https://www.nyiso.com/documents/20142/5990681/AC-Transmission-Appendices-2019-04-08.pdf/1d0d4e35-5061-6aaa-9776-365388380dc4>
- Western NY Public Policy Planning Report_
<https://www.nyiso.com/documents/20142/2892590/Western-New-York-Public-Policy-Transmission-Planning-Report.pdf/d3f62964-2e2d-588c-2da4-9aa33bb5470b>
- 2019 CARIS Report
<https://www.nyiso.com/documents/20142/2226108/2019-CARIS-Phase1-Report-Final.pdf/bcf0ab1a-eac2-0cc3-a2d6-6f374309e961>

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<https://www.nyiso.com/documents/20142/2226108/2019-CARIS-Phase1-Appendix-Final.pdf/7d061d58-85c5-6319-2407-3e2bdddcee71>

Relevant Tariff Sections: <https://www.nyiso.com/regulatory-viewer>

- Section 22 Transmission Interconnection Procedures
- Section 31.4 Public Policy Transmission Planning Process

VSA Baseline Analysis

Case Assumptions

Q1. What ratings are used in VSA Baseline cases?

NYISO Response:

Winter ratings are used in the spring light load cases and summer ratings are used in the summer peak load cases.

Q2. What are the assumptions for peaker units or aged units in Zone K (Long Island) and Zone J (New York City)? Can conventional units that are offline be switched on or redispatched?

NYISO Response:

The assumptions regarding the deactivation of generators subject to the DEC rules on air emissions from simple-cycle combustion turbines (6 NYCRR Part 227-3) are consistent with those reflected in the NYISO's latest FERC Form 715 Filings. In addition, the VSA Baseline cases also incorporate generator removal assumptions based upon age that are similar to the 2020 RNA 70 percent renewable energy by 2030 (70 x 30) scenario assumptions. Conventional units can be switched on or redispatched as long as their bus codes are not type 4 or Pmax = 0MW, indicating that a unit is unavailable.

Q3. Are there any must-run units in Zones J & K and can their output be reduced in the VSA?

NYISO Response:

Certain units in Zones J & K were modeled in-service to meet local reliability needs. Those units have "planttype" option marked as "UpOnly" in the subsystem file. These units should not be reduced from the dispatch level in the cases, but their output can be increased.

Q4. How is energy storage treated in the VSA? Can these units be dispatched in the economic 8,760 hourly simulations?

NYISO Response:

Energy storage units should not be dispatched in the VSA steady state analysis, but they may be dispatched in the evaluation and selection analyses, including production cost simulations.

Q5. Can status of the Zones I & J series reactors be changed in the Baseline cases?

NYISO Response:

Generally, the status of series reactors should not be changed in the Baseline cases. In the evaluation and selection phase, NYISO may consider changes proposed by the developer to the status of the series reactors.

Note, at the July 23, 2021 ESPWG/TPAS meeting, Con Edison presented an update to their Local Transmission Plan to place the line 41 & 42 (Gowanus-Farragut) series reactors in-service starting in 2025. The summer peak Baseline case models these reactors as bypassed, but their status will not materially affect the Baseline results. After consultation with the local TOs, the NYISO may make necessary topology updates in the Evaluation & Selection phase, but does not intend to update the VSA cases.

Q6. How are the offshore wind projects modeled in the case?

NYISO Response:

With the exception of Q#612/695 South Fork Wind, all of the proposed offshore wind generators are currently modeled simply as injections at their point of interconnection because their final configurations have not yet been determined. The NYISO may make modeling changes or add scenarios in the evaluation and sufficiency assessments if there are offshore wind project updates available.

Q7. Are any of the transmission projects in the Utility Investment Working Group report, a component of the PSC PowerGrid study, modeled in the cases?

NYISO Response:

Firm Transmission Owner Local Transmission Projects are modeled in the cases, including the three Con Edison TRACE projects in New York City and LIPA's 33kV Barrett double bus tie reconfiguration, Wildwood to Riverhead 69 kV to 138 kV conversion, and the new 138 kV Riverhead to Canal circuit.

Q8. Which year's load forecast is modeled in the Baseline and Alternate scenarios?

NYISO Response:

For summer peak load cases, the New York Control Area (NYCA) loads are consistent with the 2021 Gold Book¹ projection of the net 2031 Summer Coincident Peak load including the impact of the behind-the-meter (BTM) distributed generation assumptions. For the spring light load cases, NYCA loads are 45% of 2031 Summer Coincident Peak load including the BTM distributed generation assumptions.

Q9. In the Alternate Scenario, where does the East Garden City offshore wind interconnect?

NYISO Response:

In the Alternate Scenario, the offshore wind is connecting on the 345kV side of East Garden City, bus number 128825.

Q10. What is the schedule of controllable LIPA imports in VSA Baseline assumptions?

¹ <https://www.nyiso.com/documents/20142/2226333/2021-Gold-Book-Final-Public.pdf/b08606d7-db88-c04b-b260-ab35c300ed64?t=1619631804748>

NYISO Response:

In the VSA Baseline cases, line 901 (Valley Stream – Jamaica 138 kV) is scheduled at 100 MW from Long Island to New York City, and line 903 (Lake Success – Jamaica 138 kV) is scheduled at 200 MW from Long Island to New York City, for a total of 300 MW. The Neptune line is scheduled at 660 MW import in the summer peak case and 0 MW import in the spring light load case. The Cross Sound Cable and Northport-Norwalk PARs are scheduled at 0 MW import for the summer and spring light load cases. The Y49 line (Sprain Brook – East Garden City 345 kV) is scheduled such that the Zone K to I flow is evenly split between the Y49 and Y50 (Dunwoodie – Shore Rd 345 kV) lines.

Depending on a PPTN project's capability, a Developer may propose to change these schedules, and schedules of internal PARs, as long as the following are met:

- Maintain at least a total of 300 MW flow scheduled into Jamaica.*
- For any PAR within Long Island, on a Long Island tie line, or proposed as part of a PPTN project, the scheduled pre-contingency flow on the PAR should be no more than 75% of its rating, per the Transmission Expansion and Interconnection Manual.*
- Scheduled flows on external tie lines are maintained.*

Q11. A few 138kV circuits in Long Island system have winter ratings lower than summer ratings, are these correct?

NYISO Response:

The NYISO confirmed that these circuit ratings were correct at the time of the Baseline Assessment.

Simulation Software and Options

Q12. Which software did NYISO use for running the contingency analysis?

NYISO Response:

NYISO conducted the Baseline Assessment with TARA 1902.2.

Q13. Will NYISO provide TARA option files?

NYISO Response:

NYISO will provide N-1 and N-1-1 option files in CSV format in the latest base case package. The options files used in the baseline case and alternate scenario were created to help minimize the high number of overloads found with up to 12 GW of offshore wind connected to the existing transmission system. Developers may use different options in development of their project as long as they are consistent with the Sufficiency Criteria.

Q14. Why are “enforcePmax” and “unitSelectionMode” not enforced in the NYISO’s TARA options file?

NYISO Response:

The “enforcePmax” option is only effective for units with an initial Pgen of larger than Pmax. In the Baseline case and Alternate Scenario, generators are dispatched below Pmax, so “enforcePmax” will not affect results. The “unitSelectionMode” applies user-defined unit/load selection options. Developers may

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enable or change these options based on their preferences. A few units in Long Island are dispatched in-service, but below P_{min} , in case of outage of an offshore wind plant in a load pocket, such as Barrett.

Monitor & Subsystem Files

Q15. Are offshore wind and other renewables included in the inertial response of the system, i.e. “default inertia” subsystem?

NYISO Response:

The default inertia subsystem is for the entire Eastern Interconnect system, including offshore wind and other renewables. Any post-contingency output change to the downstate renewables in the VSA would be minimal.

Q16. What is the study area for Baseline Assessment?

NYISO Response:

The VSA will consider the entire NYCA. To manage the large number of constraints, the Baseline Assessment focused on contingencies and monitoring in Zones H - K.

Q17. Can radial facilities be excluded from monitoring?

NYISO Response:

Radial facilities can be excluded for voltage monitoring for the post-contingency conditions.

Q18. Can flow on Dysinger PAR reverse?

NYISO Response:

In VSA, yes, as long as it will not result in any violations. The scheduled pre-contingency flow on a PAR should be no more than 75% of its rating, per the Transmission Expansion and Interconnection Manual.

Contingencies and Allowable System Adjustments

Q19. Are any offshore wind generation units allowed to curtail output under N-1-1 conditions for the Baseline or Alternate Scenarios?

NYISO Response:

Per the sufficiency criteria, offshore generation cannot be curtailed for the Baseline cases. There are no requirements for the Alternate Scenario; those results are provided for information. However, the Alternate Scenario, among other possible scenarios with higher offshore wind buildout, will be used to assess the benefits of proposed transmission projects in the evaluation and selection phase, including under N-1-1 conditions.

Q20. Are renewables other than Long Island offshore wind allowed to be redispatched in the VSA?

NYISO Response:

Renewables in Zones H - J should not be redispatched. This includes offshore wind, utility scale solar, and the Rainey HVDC. For purpose of the VSA, upstate renewables are allowed to be redispatched, if necessary.

Q21. Should contingencies for the loss of an entire offshore wind plant be respected?

NYISO Response:

Yes, per Q6, the configuration of these offshore wind farms are unknown and a single element contingency could result in loss of the entire plant.

Q22. Are Bus Section contingencies and P5 contingencies included in VSA Baseline analysis?

NYISO Response:

Bus Section and P5 contingencies are included in N1 and L2 contingency decks and will be simulated according to the appropriate criteria.

Q23. Will “SB:SPRA345_RN2” and “Y49 M29” contingencies be included in contingency deck?

NYISO Response:

Yes. These two contingencies have same impact as the loss of the Y49 cable for the Baseline cases, but could have different impacts depending on the potential PPTN project-related transmission topology changes.

Q24. Can developers ignore the automatic single branch outages command in the N1 & L2 contingency files?

NYISO Response:

Yes, as long as developers account for any new contingencies that could be created by the PPTN project or other case assumptions.

Contingency Analysis Criteria

Q25. Which set of ratings is utilized for cables in Con Edison under N-1 and N-1-1 conditions?

NYISO Response:

The NYISO utilizes LTE ratings unless the NYSRC Reliability Rule Exception for underground cables may be applied. For the VSA, the study auxiliary files have accounted for the appropriate ratings for securing the system.

Q26. What facilities need to be secured for Single + Multiple contingency combinations in N-1-1 analysis?

NYISO Response:

BPS elements should be secured for Single + Multiple contingencies.

Q27. Should the LIPA 138 kV BES or BPTF (and not BPS) facilities meet NERC TPL-001-4 performance requirements, or meet performance requirements specified in NPCC Directory 1?

NYISO Response:

LIPA 138kV and above facilities should meet all applicable NERC, NPCC, and NYSRC performance requirements. However, there are no LIPA 138 kV facilities classified as BPS and subject to NPCC and NYSRC performance criteria. Any new 345 kV facilities will be assumed to comply with NPCC and NYSRC BPS criteria in the VSA.

General

Sufficiency Criteria

Q28. Can non-wires or hybrid (e.g., transmission plus generation/storage) solutions be proposed and would they be eligible for recovery under the NYISO tariff?

NYISO Response:

All solutions can be proposed and considered in VSA. Note, for this particular PPTN, an intertie cable is required under the sufficiency criteria. Moreover, in order to be eligible for cost recovery under NYISO OATT, the solution must be transmission only.

Q29. Is the requirement for a new intertie to increase transfer capability between Zones K & I, between Zone K & J, or both?

NYISO Response:

The requirement is for a new transmission intertie cable between Zone K and the rest of the NYCA.

Q30. Would potential solutions that do not include a new Zone K intertie, but otherwise satisfy all of the PPTN requirements, be considered?

NYISO Response:

Transmission solutions that do not include a new intertie cable between Zone K and the rest of NYCA will not be deemed sufficient and will not move on to the second phase of the evaluation. The PPTN solution must resolve both relevant Zone K and interface constraints, as well as relevant constraints outside of Zone K (see next section).

Q31. Will the ISO consider potential solutions that utilize offshore transmission facilities?

NYISO Response:

The NYISO will consider all solutions, including those that utilize offshore transmission facilities.

Q32. What N-1-1 criteria will apply in VSA?

NYISO Response:

NERC, NPCC, NYSRC, and TO N-1-1 criteria will apply. Con Edison's N-1-1-0 criteria will not be performed during VSA, but will be applied in the interconnection studies.

Potential Constraints Excluded From Sufficiency Criteria

Q33. Are all constraints below 138 kV in Zone K excluded from the Developer's responsibility to resolve within their proposals?

NYISO Response:

Yes, constraints below 138 kV that are not BES do not need to be addressed under sufficiency criteria.

The interconnection process will identify upgrades for any lower voltage reliability violations caused by a PPTN project.

Q34. Do all observed overloads need to be relieved?

NYISO Response:

Constraints that are driven primarily by other VSA baseline assumptions (e.g., New York City-connected offshore wind plants and the Rainey HVDC), rather than Long Island offshore wind, do not need to be resolved by the project under the sufficiency criteria.

Q35. Can the NYISO clarify which constraints related to the interconnection of Long Island offshore wind farms do not need to be addressed under sufficiency criteria?

NYISO Response:

In addition to constraints discussed in Q33 and Q34, the Barrett – New Bridge Rd and Barrett – Valley Stream 138 kV² constraints do not need to be resolved. However, a PPTN project should not make these constraints worse.

Q36. NYISO has indicated that certain constraints/overloads are excluded from the sufficiency criteria. How will these constraints be treated in selection criteria?

NYISO Response:

In most cases, the excluded constraints will not be considered in the selection criteria unless they are a distinguishing factor between projects. For example, a project that results in no 69 kV overloads may be viewed more favorably compared to a project that results in many 69 kV overloads for the same level of offshore wind export.

Q37. Will the upgrades to facilities (specifically the 138kV lines near Barrett) resulting from previously awarded offshore projects be included in the evaluation and selection phase?

NYISO Response:

It is too preliminary to model these upgrades based on the presentation³ for the Empire Wind 2 developer at the August 2, 2021 TPAS/ESPWG meeting. If new information on these upgrades becomes available, NYISO may consider it after the VSA.

Additional Resources

Q38. Can NYISO share the equipment ratings indicating what is limiting for circuits identified as overloaded in the Baseline case results?

² The Technical Conference presentation mentioned Barrett to East Garden City 138 kV lines. This FAQ clarifies that it is the Barrett to New Bridge Rd. and Barrett to Valley Stream 138 kV constraints that are excluded from sufficiency criteria.

³ <https://www.nyiso.com/documents/20142/23466290/EW2%20PPTN%20Proposal%20r2.pdf/e62df6b4-0ec1-e542-9427-7cf8d973468f>

NYISO Response:

Rating sheets for the relevant LIPA and NYPA circuits will be provided to Developers with CEII approval.

Q39. Can NYISO provide system diagrams for Zones J & K systems?

NYISO Response:

One line system diagrams will be provided to Developers with CEII approval.

Q40. Does NYISO provide stability, short circuit, and economic planning databases used in the analyses?

NYISO Response:

Only power flow cases were created for the VSA. Developers may request the standard NYISO stability and short circuit databases in a CEII/NDA request form, but these will not be included in the VSA assumptions. The NYISO's economic analysis databases are not provided because they contain Confidential Information that the NYISO cannot disclose under its Code of Conduct. See OATT Attachment F.

Evaluation Assumptions

Q41. How will the evaluation treat transmission projects in NYSERDA's Tier 4 solicitation?

NYISO Response:

A generic 1,310 MW HVDC injection at Rainey is modeled for the VSA. NYISO may update the analysis databases with up-to-date information in the evaluation and selection phase, including any projects that are awarded Tier 4 Renewable Energy Credits (RECs) and known associated upgrades.

Q42. How did NYISO determine the points of interconnection (POI) for the non-awarded offshore wind farms modeled in the Alternate Scenario (6 GW of offshore wind in Zone J and 6 GW of offshore wind in Zone K)?

NYISO Response:

NYISO consulted with stakeholders and policymakers, and reviewed development trends in choosing the offshore wind assumptions. These specific offshore wind points of interconnection (POIs) and sizes are reasonable assumptions of a possible offshore wind buildout and do not indicate any specific knowledge of development plans. Other scenarios, including different offshore wind POIs and sizes, may also be used in the evaluation and selection phase.

Q43. What are the interconnection statuses of the offshore wind projects with NYSERDA or LIPA awards and are their study reports available?

NYISO Response:

On the NYISO interconnections site, <https://www.nyiso.com/interconnections>, you may view any completed study reports and the interconnection status on the NYISO Interconnection Queue.

Evaluation Metrics

Q44. Will feasibility and high-level constructability be considered when evaluating cable routes?

NYISO Response:

Yes, the NYISO will consider these factors in the evaluation and selection phase in selection criteria, such as risk to project completion.

Q45. Will NYISO focus on Long Island when considering impacts on system utilization (i.e., performance)?

NYISO Response:

NYISO will consider the project's impact across the entire NYCA system.

Q46. Could NYISO provide clarity on the "Transfer Capability" and "Cost per MW", and will it consider Zone K import or export limits?

NYISO Response:

Given the range of load and generation conditions, these metrics will assess the project's ability to export offshore wind across the relevant interfaces. "Cost per MW" will be calculated using the cost of the entire project. A project's ability to import power into Long Island during low wind periods will also be assessed in these or other metrics.

Q47. Will NYISO apply a social cost of carbon pricing in the Evaluation/Selection phase?

NYISO Response:

The NYISO may consider the social cost of carbon or other carbon price indices, but it has not been determined if and how social cost of carbon will be considered in the LI PPTN. You may review the how social cost of carbon was evaluated in the AC Transmission PPTN in section A5.1 (Social Cost of Carbon Sensitivity) of the AC Transmission Public Policy Transmission Planning Report Addendum.

Developers may also wish to consult the New York State Department of Environmental Conservation Guidelines for "Establishing a Value of Carbon" See

https://www.dec.ny.gov/docs/administration_pdf/vocguidrev.pdf

Q48. Could NYISO provide clarity on the operability metric?

NYISO Response:

See the NYISO's presentation at the Technical Conference on the operability metric on slide 50.

Developers may wish to review the WNY and AC Transmission reports as an example of past evaluation of the operability metric.

Q49. Should land acquisition costs be included in the cost estimate of each solution? How will property costs be considered for solutions that include demonstrated site control?

NYISO Response:

Yes, land acquisition costs should be included in the cost estimate of each solution for the evaluation phase cost metric. While the property acquisition costs are excluded from cost containment, they will be evaluated in the overall cost of the project. NYISO's independent consultant will also determine a cost for a solution's land acquisition. Solutions with site control will have their real property value cost evaluated by NYISO's independent consultant for use in the project evaluation.

Public Policy Process

Q50. What communication points will the Developer have with the NYISO prior to and after solution submission?

NYISO Response:

Prior to submission, communication will be primarily through ESPWG/TPAS stakeholder meetings. Any written questions NYISO can answer will be addressed at a stakeholder meeting or additional FAQ documents. Questions may be submitted at any time to PublicPolicyPlanningMailbox@nyiso.com. After project submission, NYISO may request project clarification or additional information from the developer at any point in the process. See OATT §31.4.4.3.5. NYISO may also invite each Developer to give an introductory presentation to NYISO during VSA. Direct communication between NYISO, the Developer, and TOs will likely be more frequent in the interconnection process than in the public policy project evaluation.

Q51. How will solution proposals be submitted?

NYISO Response:

Developers should complete all required information 31.4.5.1 of Attachment Y by completing and submitting to the NYISO the forms set forth in Attachments B and C to the PPTPP manual.⁴ Note that Attachment C was recently updated and posted on August 6, 2021. The application materials should be emailed to PublicPolicyPlanningMailbox@nyiso.com and NYISO will provide instruction if any attachments are too large to be sent via email. An interconnection application is also required for each project through the interconnection project community (additional information can be found at <https://www.nyiso.com/interconnections>).

Q52. Is there a required or expected in-service date of a PPTN solution?

NYISO Response:

There is no required in-service date. NYISO will review the developer's proposed project schedule and take it, and any associated in-service risks, into consideration during the evaluation and selection phase. The NYISO will consider the extent which a project can timely enter into service to meet the requirements of the Climate Leadership and Community Protection Act.

⁴ <https://www.nyiso.com/manuals-tech-bulletins-user-guides>

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Q53. How will NYISO consider PPTN facilities jointly developed with a non-PPTN developer not seeking cost-recovery through the Public Policy Transmission Planning Process?

NYISO Response:

NYISO will consider whether other projects are sufficiently firm to be included in its modeling for project evaluation. OATT 31.4.5.1.4 and 31.4.5.1.6 details the submission requirements for contracts and financing for PPTN solution facilities.

Upgrades

Q54. Is an Upgrade still treated as an upgrade if the project is proposed by the incumbent TO?

NYISO Response:

The definition of “upgrade” under Section 31.6.4 of Attachment Y does not change based on the entity that proposes the facility. However, in anticipation of the NYISO filing pending tariff revisions that were discussed with stakeholders at various working groups from June 2021 to August 2021, if a Transmission Owner proposes modifications to its own facilities as a component of their Public Policy Transmission Project and those modifications meet the definition of a Public Policy Transmission Upgrade (to be defined in Section 31.1 of Attachment Y), the NYISO will designate those Public Policy Transmission Upgrades in accordance with the proposed designation process. Public Policy Transmission Upgrades will be designated to the Transmission Owner that owns the facility.

Q55. Are developers required to provide a cost for facilities it classifies as upgrades?

NYISO Response:

Yes, a Developer is required to submit cost estimates for all project components including new facilities and upgrades. Any voluntary cost cap should also include all project components. However, in anticipation of the NYISO filing pending tariff revisions that were discussed with stakeholders at various working groups from June 2021 to August 2021, the NYISO advises Developers to provide separate cost estimate figures for project components are new facilities and upgrades. In addition, a Developer that wishes to propose cost containment should continue to include capital costs consistent with the tariff that is effective at the time of submission. A Developer may also submit a proposed cost cap that only include facilities that the Developer considers to be new transmission facilities. Once the aforementioned tariff provisions are effective, NYISO will afford Developers an opportunity to clarify any submitted cost containment mechanisms to align it with what constitutes Included Capital Costs and Excluded Capital Costs.

Production Cost Simulation

Note, the economic planning database that will be used in the Evaluation & Selection phase is currently under development. Therefore, the majority of the answers provided in this section refer to the most recent database from the 2019 CARIS study⁵. These answers represent past NYISO practice, but may not reflect the future study practice, including for evaluation of projects in response to the LI PPTN. A data

⁵ <https://www.nyiso.com/documents/20142/2226108/2019-CARIS-Phase1-Report-Final.pdf>

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catalog has been added to the end of this document containing links to the 2019 CARIS input data and results. The Economic Planning Manual is currently being revised with stakeholder review and contains additional information on the assumptions and methodology typically used in NYISO production cost simulations.

Q56. What network model will the production cost simulations use?

NYISO Response:

The LI PPTN database will utilize the models from the 2021-2040 System & Resource Outlook, which is currently under development, and may take into consideration the latest system updates. The NYISO will build out a 30-year baseline database and a 20-year database for each PPTN project starting with the project in-service date. A comparison of the results of project and baseline cases will be performed to determine the project benefits.

Q57. What are the monitored facilities, facility ratings, and contingencies used in the production cost simulations?

NYISO Response:

See Section 3 Methodology and Metrics, and Section 4 Model Assumptions of the 2019 CARIS report, as well as more details in Appendix C and Appendix D.

Q58. How will NYISO model the existing PARs on the LIPA interface for the purpose of production cost modeling?

NYISO Response:

In the 2019 CARIS, existing PARs on the LIPA interface had their hourly schedules optimized based on minimizing production cost.

Q59. How is the generic 1,310 MW HVDC injection at Rainey 345 kV modeled in the production cost simulations?

NYISO Response:

In the 2019 CARIS, the generic HVDC injection at Rainey 345 kV was modeled as a fixed pattern injection with no northern terminal, and it was given an historic HQ-NYISO schedule scaled to provide a maximum output of 1,310 MW. The LI PPTN, evaluation and selection phase may use updated modeling assumptions based on any updates in the 2021-2040 System & Resource Outlook as well as any NYISERDA Tier 4 REC award(s).

Q60. How will NYISO model the 138 kV Barrett constraints that are excluded from sufficiency criteria in production cost modeling?

NYISO Response:

In the LI PPTN, securing these lines will depend on if there are any relevant system updates, including upgrades associated with the Empire Wind II projects. Absent any such updates, NYISO does not intend

to secure these lines.

Q61. What generation dispatch profile will NYISO use for offshore wind projects?

NYISO Response:

In the 2019 CARIS, hourly offshore wind profiles were based off the NREL database and adjusted for offshore wind farm size and location.

Property Rights

Q62. Please describe the process or processes for obtaining rights to use existing utility right-of-ways?

NYISO Response:

Developers should indicate how they intend to obtain property rights for their project, including, but not limited to use of new or existing rights of ways. Review OATT sections 31.4.5.1.1, 31.4.5.1.4, and 31.4.8.1.7 for more detail.

Q63. There is an exception within the Article VII regulations that exclude underground transmission lines in a city with a population in excess of 125,000. Is there a requirement to file an Article VII or can you utilize the exception if applicable?

NYISO Response:

Questions regarding Article VII siting requirements should be directed to the New York State Public Service Commission.

Introduction

On August 12, 2021, the NYISO solicited Public Policy Transmission Projects and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN) for evaluation in the NYISO's Public Policy Transmission Planning Process.

The NYISO held a Technical Conference with Developers and other interested parties on July 8, 2021, and issued a frequently-asked-questions (FAQ) document on August 11, 2021, that summarizes questions that were received after the Technical Conference. This document is a supplemental FAQ to address questions received since posting of the August 11 FAQ. Please refer to the following references which provide more detail on the topics related to these questions:

August 11, 2021, FAQ

<https://www.nyiso.com/documents/20142/22968753/LIPPTN-FAQ-08112021.pdf/9ea835b4-4343-be80-cdc2-c932a067e5cd>

LI PPTN Project Solicitation

<https://www.nyiso.com/documents/20142/22968753/Long-Island-Offshore-Wind-Export-Public-Policy-Transmission-Need-Project-Solicitation.pdf/51b8fdeb-1a66-2938-f116-38f1be486e0d>

Technical Conference Presentation:

<https://www.nyiso.com/documents/20142/22968753/LI-PPTN-TechConference.pdf/c9ab8cbb-9104-b145-3b43-d5b0de929114>

Case Assumptions

Q1. Will the renewable buildout assumptions in the Evaluation and Selection cases be the same as in the Viability & Sufficiency Analysis (VSA) cases?

NYISO Response:

For land-based renewable resources, the VSA cases used assumptions similar to the 2020 RNA “70 x 30” scenario, which were also similar to the assumptions used in the 2019 CARIS “70 x 30” scenario. In the Evaluation & Selection phase, the land-based renewable resource buildout assumptions will be updated mainly based on the assumptions being developed for various scenarios in the 2021-2040 System & Resource Outlook and updated if necessary. The offshore wind assumptions will be consistent with the VSA Baseline and Alternate Scenarios, but other offshore wind scenarios may be considered as well.

Q2. Can the schedule of the external tie lines with PJM and ISO-NE be adjusted in the base case or after a first level contingency? Similarly, can the schedules of the 901 and 903 Jamaica 138 kV tie lines with Con Edison be adjusted?

NYISO Response:

In the VSA, the schedules of the external ties lines will not be adjusted, even after first level contingency. The scheduled flows on the 901 and 903 lines can be adjusted in the base case or after the first level contingency, provided the schedule is not greater than 75% of the facility rating and at least 300 MW is scheduled into Jamaica (see Q10 of August 11, 2021, FAQ). However, NYISO will evaluate if any change on the 901 and 903 schedules in combination with the project results in additional reliability or operability concerns during the VSA and the evaluation and selection phases.

Contingency Analysis Criteria

Q3. Did NYISO use TARA’s Security Constrained Dispatch (SCD) in the Baseline Analysis?

NYISO Response:

Yes, the NYISO enabled certain SCD automated system adjustments when performing the analysis at N-0 and N-1 contingency levels. The options files have been provided to developers along with the baseline cases. Given the severity of constraints that SCD algorithms attempted to mitigate, the results could change with different SCD options. Developers may modify the SCD options to best optimize the results for their post-project cases. However, the SCD options must be consistent with the LI PPTN sufficiency criteria. See the August 11, 2021, FAQ for more details on allowable system adjustments.

Q4. Which contingencies should be included in the N-1-1 analysis?

NYISO Response:

VSA will consider NERC TPL and LIPA N-1-1 criteria for the Bulk Electric System (BES) facilities and NPCC and NYSRC N-1-1 criteria for the Bulk Power System (BPS) facilities. Please refer to the file

“TS2021_Yr_2031S_L1_PPTN_v0.con” for first level contingencies and “TS2021_Yr_2031S_L2_PPTN_v0.con” for second level contingencies.

Note, the provided contingency files contain contingencies, e.g., multiple element contingencies, for the second level which are applicable to BPS facilities, but not applicable for non-BPS facilities (including LIPA’s 138 kV system). For the purpose of meeting the sufficiency criteria, a developer may ignore any N-1-1 constraints that are beyond criteria. Developers may modify the auxiliary files the NYISO provided, specifically the N-1-1 exclude file, to change which facilities are monitored for different contingency types – provided that the analysis respects all applicable criteria.

Developers are reminded to account for contingency modifications related to system changes associated with their LI PPTN projects.

Q5. Should lines be secured to LTE ratings (Rate B) for N-1-1 analysis?

NYISO Response:

Yes, most elements should be secured to the LTE rating with notable exceptions contained in the exclude file. Con Edison’s N-1-1-0 criterion requires that certain facility loadings return to normal rating (Rate A), but this analysis will not be required as part of the VSA.

Q6. How will Con Edison’s N-1-1-0 criteria be used in the evaluation?

NYISO Response:

Con Edison’s N-1-1-0 planning criteria will not be considered under the sufficiency criteria in the VSA. N-1-1-0, along with all other applicable reliability criteria, will be evaluated in the interconnection process and considered in the evaluation and selection phase. To the extent possible, any Network Upgrade Facilities and cost estimates identified in the interconnection process will be incorporated in the evaluation and selection phase.

Q7. Is non-consequential load loss (i.e., load shedding that is not a direct consequence of a contingency event) allowed in the VSA?

NYISO Response:

No, load shedding will not be permissible to resolve any violations in VSA.

Q8. Can Barrett 138 kV contingencies be excluded given the anticipated Empire 2 Wind’s upgrades?

NYISO Response:

Certain identified overloads near Barrett 138 kV are expected to be resolved by the Empire Wind 2 upgrades. However, there is no indication that these future upgrades will affect the Barrett 138 kV contingency definitions. Therefore, these contingencies will be included in the VSA.

Q9. NYISO indicated that minimal output changes to renewables is possible based on inclusion in the “Default Inertia” subsystem. Does this mean that curtailment of Zone K solar is allowed in the VSA?

NYISO Response:

Curtailment of Zone J & K renewable resources, both solar and wind, is not allowed in the VSA. The “Default Inertia” subsystem allows power balancing following a loss of generation contingency to be spread across the entire Eastern Interconnection. The resulting minimal post-contingency generation changes are consistent with NYISO planning processes, but pre-contingency reduction of Zone J & K renewable resources is not allowed under the sufficiency criteria.

Q10. Is there any limit to the allowable amount of offshore wind curtailment allowed in the Alternate scenario?

NYISO Response:

No. Although curtailment is not allowed in the Baseline scenario with 3 GW of Zone K offshore wind, there is no such requirement for the Alternate scenario with 6 GW of Zone K offshore wind. The Alternate scenario, among other potential scenarios, will be used to evaluate and compare the PPTN projects’ ability for the system to export more than the minimum of 3 GW. All else being equal, a PPTN project that results in less curtailment in the Alternate scenario will perform better in the expandability and other metrics. Such project performance will be considered in the comprehensive evaluation of all categories of metrics to select the more efficient or cost-effective solution.

Sufficiency Criteria

Q11. Can a PPTN solution include an offshore transmission system which would connect to the offshore wind generator collector systems and divert some of the output from offshore wind farms from their respective points of interconnection (POIs)?

NYISO Response:

The NYISO would consider such a project provided that it meets all the sufficiency criteria, including at least one new intertie cable connecting Zone K and the rest of the NYCA. However, Developers should be aware that offshore wind generation feeders are typically considered Generator owner attachment facilities and are subject to FERC’s precedent on open access and priority rights interconnection customers’ interconnection facilities. Developers proposing to interconnect to a Generator owner’s attachment facility should consider also submitting any agreements, if applicable, for the use of the attachment facility pursuant to Section 31.4.5.1.4 of Attachment Y.

Q12. Are 138/69 kV and 138/34.5 kV transformers part of the sufficiency criteria?

NYISO Response:

None of the LIPA 138/69kV and 138/34.5kV transformers are classified as BES and therefore those transformers are excluded from the sufficiency criteria.

Q13. Do the Valley Stream to East Garden City 138 kV constraints need to be addressed in the VSA given the anticipated Empire Wind 2 upgrades?

NYISO Response:

Many of the overloads identified in the Baseline Assessment are driven entirely by the Empire Wind 2 farm pushing power from Valley Stream to East Garden City and are expected to be resolved by the Empire Wind 2 upgrades. These overloads that are specific to Empire Wind 2 can be excluded from the sufficiency criteria, similar to the treatment of the Barrett – Valley Stream and Barrett – New Bridge Rd 138 kV overloads identified in the Baseline Assessment.

However, the East Garden City – Valley Stream 138 kV lines are a part of the overall export path of offshore wind power from Long Island to the rest of the New York Control Area. There could be constraints on these lines that are not driven solely by Empire Wind 2. Developers are advised to not simply ignore all overloads on the East Garden City – Valley Stream 138 kV lines as there could be constraints identified in the VSA or in other scenarios in the evaluation and selection phase that are relevant to addressing the LI PPTN.

General Questions

Q14. Can NYISO provide the details to P5 (fault plus relay failure) contingencies?

NYISO Response:

LIPA, the facility owner, will provide a general description of the relay schemes to be shared with developers.

Q15. Can NYISO provide breaker-level diagrams of Zones I-K?

NYISO Response:

NYISO has provided NYISO's system one-line and breaker diagrams. For more detailed system information, you may request this directly from the respective TOs.

Q16. What level of detail is required from the PPTN Developer for the cost estimates of the upgrades to existing transmission facilities?

NYISO Response:

Developers are required to provide adequate detail for all facilities that are a part of their project, including upgrades to existing facilities, for NYISO to do a thorough evaluation of all metrics in the evaluation and selection. The data submission attachments outlined in Attachment C of the Public Policy Transmission Planning Manual, including cost estimate attachments C.4.1-C.4.4, are required for both new facilities and upgrades to existing facilities.

Note that the NYISO recently proposed tariff changes to provide a mechanism to implement the TO's right-of-first-refusal over upgrades to their existing transmission facilities. If those tariff changes are accepted by FERC, the NYISO would rely on its independent consultant's cost estimates for those facilities during the evaluation and selection phase.

Introduction

On August 12, 2021, the NYISO solicited Public Policy Transmission Projects and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN) for evaluation in the NYISO's Public Policy Transmission Planning Process.

The NYISO held a Technical Conference with Developers and other interested parties on July 8, 2021, and issued a frequently-asked-questions (FAQ) document on August 11, 2021 and a Supplemental FAQ on September 1, 2021, that summarizes questions that were received after the Technical Conference. This document is a second supplemental FAQ to address questions received since posting of the September 1 Supplemental FAQ. Please refer to the following references which provide more detail on the topics related to these questions:

September 1, 2021, Supplemental FAQ

<https://www.nyiso.com/documents/20142/22968753/LIPPTN-SupplementalFAQ-0912021.pdf/c7d00a5e-d93e-453a-bd87-6569beaaf526>

August 11, 2021, FAQ

<https://www.nyiso.com/documents/20142/22968753/LIPPTN-FAQ-08112021-rev09202021.pdf/9f174e6e-4d19-fd67-3670-b7d216339703>

LI PPTN Project Solicitation

<https://www.nyiso.com/documents/20142/22968753/Long-Island-Offshore-Wind-Export-Public-Policy-Transmission-Need-Project-Solicitation.pdf/51b8fdeb-1a66-2938-f116-38f1be486e0d>

Technical Conference Presentation:

<https://www.nyiso.com/documents/20142/22968753/LI-PPTN-TechConference.pdf/c9ab8cbb-9104-b145-3b43-d5b0de929114>

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Q1. Can NYISO provide substation diagrams?

NYISO Response:

The Long Island Power Authority (LIPA) and Consolidated Edison Company of New York, Inc. (Con Edison) have agreed to provide in-person access at their sites by NYISO Qualified Developers for viewing certain breaker-level diagrams of selected substations for the purpose of developing a LI PPTN solution, pursuant to a non-disclosure agreement (NDA) provided by each company for access to critical energy infrastructure information (CEII).

All requests for access must be in writing and provided two business days in advance. All visitors to Con Edison must comply with Con Edison's COVID requirements including wearing a mask while inside of Con Edison's building. All visitors to Long Island offices shall comply with PSEG Long Island Job Hazard Analysis (JHA) COVID related protocols. A copy of JHA can be provided. Please note that COVID related requirements are subject to change.

See the September 10, 2021, email to Qualified Developers for LIPA and Con Edison contacts to obtain more information.

Q2. Can NYISO provide the details to P5 (fault plus relay failure) contingencies?

NYISO Response:

The relay details associated with relevant P5 contingencies have been provided to developers.

Q3. What redacted information is required in the PPTN application?

NYISO Response:

Please refer to OATT Section 31.4.4.3.3, which states: "If the Developer submits Confidential Information, as defined in Section 31.4.15, as part of its project information submitted pursuant to Section 31.4.4.3.2 or as part of its additional project information submitted pursuant to Section 31.4.4.3.5, the Developer shall submit redacted and un-redacted versions of this project information pursuant to Section 31.4.15.4."

Q4. Please confirm the OATT sections referenced in the answer to Q53 in the August 11 FAQ.

NYISO Response:

The answer to Q53 incorrectly cites OATT 31.4.5.6.1, which should instead be OATT 31.4.5.1.6. The August 11 FAQ has been corrected and reposted on the NYISO website.

Q5. Is the PPTN project responsible to fix Zone J violations?

NYISO Response:

See Q34 in the August 11, 2021, FAQ. Constraints that are driven primarily by other VSA baseline assumptions (e.g., New York City-connected offshore wind plants and the Rainey HVDC), rather than Long Island offshore wind, do not need to be resolved by the project under the Sufficiency Criteria.

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Q6. Are the LIPA bus section contingencies considered “multiple element” contingencies? Are these and other multiple element contingencies valid for the second level contingency for 138kV facilities?

NYISO Response:

Bus section contingencies are considered “multiple element” contingencies. Under the Sufficiency Criteria, “multiple element” contingencies are not valid as second level contingencies for facilities below 200 kV but are valid second level contingencies for facilities above 200 kV. See Q26 in the August 11, 2021, FAQ and Q4 in the September 1, 2021, Supplemental FAQ.

Q7. Can NYISO clarify what the facilities are in the “BMS Only” subsystem and if this is equivalent to the BES-only (non-BPS) system.

NYISO Response:

“BMS Only” facilities are secured by the NYISO for N-1 and N-1-1 conditions and are controlled by the TO. The “BMS Only” subsystem overlaps with BES-only (non-BPS) facilities, but they are not equivalent.

Q8. The NYISO indicated that it utilized TARA’s Security Constrained Dispatch (SCD) function to secure the system. Instead of using SCD, can developers demonstrate that facilities can be secured for each contingency individually?

NYISO Response:

SCD is a tool in TARA to automatically make system adjustments to mitigate violations. TARA’s SCD, other tools, or manual adjustment can be used to make system adjustments to secure the system. However, those system adjustments must be consistent with the Sufficiency Criteria and should be applied pre-contingency, or after first level contingency for N-1-1 analysis.

Q9. Please clarify if the “SOFT EXCLUDE MONTYPE 'LI_69” command in the exclude file applies to all contingencies?

NYISO Response:

Yes, the SOFT EXCLUDE command applies to all N-1 and N-1-1 contingencies. Securing the 69 kV system is beyond the Sufficiency Criteria and the above command would prevent facilities below 100 kV from being taken into consideration as part of SCD system adjustments, but these facilities will be monitored for information.

Developers may modify the provided auxiliary files, as appropriate, provided they are consistent with the Sufficiency Criteria. But this does not relieve the need to review all results to determine if specific constraints are included in the Sufficiency Criteria.

Q10. Can transformer taps and switched shunts be utilized post-contingency to bring voltages back within allowable limits? If so, can Developers indicate how the voltage violations were mitigated in the application?

NYISO Response:

NYISO standard planning practice is to allow automatic transformer tap and switched shunt adjustments pre-contingency, or after first level contingency in N-1-1, but not post-contingency. Certain post-contingency manual adjustments that model operator actions might be allowed under some system conditions. However, these operator actions will be reviewed during the interconnection studies.

If certain system adjustments are proposed for a project to meet the Sufficiency Criteria, a Developer may indicate such adjustments in their application or in response to NYISO follow up questions.