Attachment F
Exhibit No. TRANSCO-100
Testimony of Victor Mullin

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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

NEW YORK TRANSCO LLC	**)**	**DOCKET NO. ER24-____-000**

DIRECT TESTIMONY OF
VICTOR MULLIN

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DIRECT TESTIMONY OF VICTOR MULLIN

I. Introduction

Q 1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A 1. My name is Victor Mullin. My business address is 1 Hudson City Center, Hudson, NY 12534.

Q 2. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?

A 2. I am currently the President of New York Transco, LLC ("Transco").

Q 3. WHAT ARE YOUR DUTIES AND RESPONSIBILITIES IN YOUR CURRENT POSITION?

A 3. As President of Transco, I lead Transco's staff and other executives in the management of the organization and in developing its operational and capital budgets. In addition, I work with Transco's Board of Managers to plan and implement short-, and long-term strategies for the company, to assess the direction of the company, and lead the company's operations consistent with its stated mission and strategic plans. I am ultimately responsible for Transco's interactions with Federal, State and local government officials, and the local community.

Q 4. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EMPLOYMENT EXPERIENCE.

A 4. I received a Bachelor's of Nuclear Science Degree from SUNY Maritime College in 1978. I also received a Master of Management Science from Pace University in 1994 and completed the Public Utility Executive Program in July 1995 at the University of Michigan.

Before accepting my current position at Transco on April 1, 2020, I was employed by Consolidated Edison Company of New York, Inc. ("Con Edison") for approximately 37 years. In 1982, I was employed by Con Edison as an Engineer and subsequently held various engineering and management positions in Central Engineering, Nuclear Power, Substations, and Gas Operations. In April 2005, I joined Con Edison Gas Operations as the Chief Gas Transmission Engineer. In December 2008, I became the Chief Civil/Mechanical Engineer in Central Engineering. In April 2017, I joined Con Edison Transmission as the Chief Engineer. In December 2018, I was appointed President of Transco.

Q 5. HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE A REGULATORY BODY?

A 5. Yes. I testified orally in Con Edison's 2013 electric and steam rate cases (Cases 13-E-0030 and 13-S-0032). In addition, I submitted written direct testimony in Transco's Article VII proceedings involving the New York Energy Solution project (the "NYES Project") (Case 19-T-0684) and the Rock Tavern to Sugarloaf project (Case 20-T-0549).

II. Purpose and Scope of Testimony

Q 6. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A 6. The purpose of my testimony is to describe Transco and provide a general overview of the Propel New York Energy Project ("Propel NY Energy Project" or "Project"). The Propel NY Energy Project is an estimated $2.7 Billion transmission expansion project (including

interconnection-related upgrades) with construction of facilities in Queens, Bronx, Westchester, Nassau and Suffolk Counties, New York. The Project was proposed by Transco and its development partner, New York Power Authority ("NYPA"), in response to the New York Independent System Operator, Inc. ("NYISO") Public Policy Transmission Need ("PPTN") competitive solicitation process in accordance with the NYISO Open Access Transmission Tariff ("OATT" or "Tariff"). Transco and NYPA included a cost containment mechanism in its project submission that requires Transco and NYPA to assume the risk for 20% of potential cost overruns above the initial cost estimate, plus a 2% escalation factor, of NYISO OATT-defined Included Capital Costs. Including the electric transmission system upgrades that are the development responsibility of the incumbent transmission owners that exercise their rights-of-first refusal, the overall estimated "project" cost is nearly $3.0 billion. The Project represents one of the largest, if not the largest, non-merchant underground and submarine electric transmission development projects on the East Coast in terms of both circuit miles constructed and capital expenditure. Transco proposes to undertake this obligation in one of the most densely populated areas of the Country and is required to commit to an in-service date of May 2030.

Q 7. WHAT TOPICS WILL YOU DISCUSS IN THE REMAINDER OF YOUR TESTIMONY?

A 7. I will first introduce Transco and explain its origination and mandate. I will also describe the NYISO process that initially identified the PPTN for the Project and the competitive solicitation process employed by NYISO to identify and select the more efficient or cost

effective project solution to meet that need. In doing so, I will outline Transco's development relationship with NYPA.

I will then briefly describe the incentive rate treatments that Transco is requesting in this filing and why the Federal Energy Regulatory Commission ("Commission" or "FERC") should approve them based on its Order No. 679 precedent and subsequent policy statement. I will also provide the information relevant to our request for the abandonment incentive in the event the Project is abandoned for reasons beyond the control of Transco and for the 50 basis point Regional Transmission Organization ("RTO") participation adder to Transco's base return on equity ("ROE") component for the Project which it is eligible to receive as a result of Transco's voluntary participation in NYISO and the transfer of operational control of the Project to NYISO.

Finally, I will reference the preferred cost allocation methodology established by the New York State Public Service Commission ("NYPSC") and support the inclusion of that allocation method in Section 36.2 of Transco's Formula Rate and Implementation Protocols ("Formula Rate") located in Attachment DD of the NYISO Tariff.

Q 8. ARE THERE ADDITIONAL WITNESSES PROVIDING TESTIMONY IN SUPPORT OF THE APPLICATION?

A 8. Yes. In addition to my testimony, the following witnesses will provide more detailed testimony on various aspects of the Project and Transco's filing:

Paul Haering, Vice President of Capital Investment, provides a technical description of the Project; describes the development of the bid proposals reviewed by the NYISO in its solicitation process; and, offers a detailed description of the reliability and economic benefits that the Project is expected to deliver. Mr. Haering will also describe

the complexities and development risks associated with a project of this magnitude and how the incentive rate treatments Transco is seeking are tailored to address those risks. Exh. No. TRANSCO-200.

Robert Caso, Vice President of Budget, Finance and Accounting, will explain the accounting methodology Transco intends to utilize for the Project and demonstrate how the Project fits into the currently effective Formula Rate. Mr. Caso also testifies to support the depreciation rates included in the Formula Rate that will apply to the Project. In addition, Mr. Caso testifies about the financial risks inherent in developing a project with the size and scope of the Project and how the financially-based incentive rate treatments that Transco is seeking were carefully tailored to address those risks. Mr. Caso will also describe and support the cost containment mechanism Transco and NYPA committed to in its project proposal. Finally, Mr. Caso will explain how Transco and NYPA will ensure that there is no duplicative recovery of Project costs. Exh. No. TRANSCO-300.

Stephen Cole-Hatchard, Jr., Senior Project Manager for Transco, describes the significant construction risks in developing the Project in the geographic locations where the project elements will be situated. Exh. No. TRANSCO-400.

John Tsoukalis, Brattle Group, provides expert testimony regarding current economic conditions and the significant economic, supply chain and other development risks Transco will face in the development of the Project. Mr. Tsoukalis also provides expert testimony related to Transco's request to include 100% of construction work in progress ("CWIP") in rate base during the development and construction phase of the Project and the customer benefits expected for this accounting treatment. Finally, Mr.

Tsoukalis supports Transco's request for the 150 basis point ROE adder for the risks and challenges associated with developing the Project. Exh. No. TRANSCO-500.

Adrien M. McKenzie, President of FINCAP, Inc., provides an independent analysis of the rate of ROE range of reasonableness to support the base ROE Transco requests to apply to the Project under its Formula Rate. Mr. McKenzie also discusses the reasonableness of the 50 basis point adder for RTO participation and the 150 basis point ROE adder for the risks and challenges associated with developing the Project. Exh. No. TRANSCO-600.

III. Identification of Exhibits

Q 9. ARE YOU SPONSORING ANY EXHIBITS IN CONNECTION WITH YOUR TESTIMONY?

A 9. Yes, my testimony includes the following exhibits:

Transco-101: *Order Addressing Public Policy Requirements for Transmission Planning Purposes*, Case No. 20-E-0497 and Case No. 18-E-0623, (March 19, 2021).

Transco-102: NYISO Long Island Offshore Wind Export Public Policy Transmission Need Project Solicitation Letter, August 12, 2021.

Transco-103: NYISO Board of Directors' Decision on Approval of Long Island Offshore Wind Export Public Policy Transmission Planning Report and Selection of Public Policy Transmission Project, (June 13, 2023).

Transco-104: Long Island Offshore Wind Export Public Policy Transmission Plan, June 13, 2023.

Transco-105: *Order on Petitions for Rehearing*, Case No. 20-E-0497 and Case No. 18-E-0623, (May 16, 2022).

IV. Overview of Transco and Development Relationship with NYPA

Q 10. PLEASE PROVIDE AN OVERVIEW OF TRANSCO.

A 10. Transco was created in 2014 and is currently owned by Central Hudson Transmission LLC, Consolidated Edison Transmission, LLC, Grid NY LLC, and Iberdrola USA Networks New York Transco, LLC.[1] Transco is a Limited Liability Company and has a four-member Board of Managers representing each of the four owners, and four officers, including myself.

Q 11. WHY WAS TRANSCO FORMED?

A 11. In April 2012, the New York State Transmission Assessment and Reliability Study ("STARS") Technical Working Group prepared a Phase II Study Report ("STARS Report")[2] that identified the need to develop significant new electric transmission infrastructure throughout the state of New York. The STARS Report was the result of a study process that began as early as 2008 and acknowledged that the last major cross-state transmission project was built in the 1980s. The STARS Report served as a blueprint for developing high-voltage electric transmission projects in New York State that are designed to replace aging infrastructure; ease congestion and reduce energy prices for the state's consumers; facilitate the growth and utilization of renewable generation resources; and,

[1] Transco's owners are subsidiaries of the four New York investor-owned utilities: Central Hudson Gas & Electric Corporation ("Central Hudson"), Consolidated Edison Company of New York, Inc. ("ConEd"), Niagara Mohawk Power Corporation d/b/a National Grid ("National Grid") and New York State Electric & Gas Corporation ("NYSEG") (collectively, the "NYTOs").

[2] New York State Transmission Assessment and Reliability Study: STARS (Apr. 30, 2012), https://www.nyiso.com/documents/20142/1398242/Phase_2_Final_Report_4_30_2012.pdf/5b412509-9ca2-61c3-e707-6b14a3515beb

meet clean air and public policy goals while ensuring long-term grid reliability and resiliency.

Transco was created to fund and develop transmission solutions identified in the STARS Report. Since the STARS' Phase II report was issued, New York has and continues to implement aggressive Climate Change policy initiatives to develop new, non-emitting electric generation resources. As stated in Transco's corporate objective, Transco is committed to developing transmission solutions to meet these challenges – and future challenges facing the New York State power grid. As a result of changes to the NYISO tariff in response to the FERC's Order No. 1000 policy initiatives, Transco actively participates in NYISO processes including competitive solicitations in accordance with the NYISO Tariff.

Q 12. DOES TRANSCO CURRENTLY OWN TRANSMISSION?

A 12. Within two years of its creation, Transco obtained and became the owner of the Transmission Owner Transmission Solution ("TOTS") projects. The TOTS projects were placed in-service in June 2016 and Transco continues to own and maintain those facilities. These projects were put in place in anticipation of the retirement of the Indian Point nuclear power plant.

In addition, Transco was awarded the development rights to the so-called "Segment B" and "Segment B Additions" projects that emanated from the NYISO Public Policy Transmission Planning Process ("PPTPP") and a competitive solicitation NYISO administered in accordance with the PPTPP. I explain the PPTPP below as it relates to Transco's selection to develop the Propel NY Energy Project at issue in this filing.

Transco recently completed construction of the "Segment B" and "Segment B Additions," (which Transco has redefined as the New York Energy Solution project ("NYES"), and the Rock Tavern – Sugarloaf project ("RTS")), with many of the project components being placed in-service six months before the Required In-Service Date specified in Transco's and NYISO's Development Agreement. Transco recently started construction of the Dover phase angle regulator ("PAR") project ("Dover PAR") in March 2023. These facilities are instrumental in relieving historic congestion on the Upstate New York/Southeast New York ("UPNY/SENY") interfaces and provide additional transmission capacity to move power between upstate and downstate New York.

Q 13. IS TRANSCO A MEMBER OF NYISO?

A 13. Yes. Transco is a voluntary transmission-owning member of the NYISO and signatory to both the Independent System Operator Agreement ("ISO Agreement") and the Amended and Restated Operating Agreement Between the New York Independent System Operator, Inc. and New York Transco LLC ("ISO/Transco Agreement"). Transco has transferred operational control of the TOTS, NYES, and the necessary components of the RTS projects to the NYISO and expects to transfer operational control of the Dover PAR project to NYISO once that facility is placed in-service.

Q 14. PLEASE DESCRIBE THE DEVELOPMENT RELATIONSHIP BETWEEN TRANSCO AND NYPA IN DEVELOPING THE PROPEL NY ENERGY PROJECT.

A 14. The concept for the Propel NY Energy Project was a joint effort between Transco and NYPA. Both Transco and NYPA understood the magnitude of the PPTN determined by the NYPSC and decided that based on their collective experience and knowledge of the project area, combining efforts in the creation of project proposals and development of an

extremely complicated, costly construction project, would be the best way to proceed and provide the greatest efficiencies for New York ratepayers.

Transco and NYPA will develop the project as equal sponsors: we will have equal (50-50) decision-making authority through all aspects of project development. Because of current limitations of NYPA's ability to fund a project of this size, Transco will financially own no less than 70% of the estimated $2.7 billion Project and NYPA will have financial ownership of no less than 15% and potentially up to 30% of the Project. The final ownership percentages will be determined in advance of project completion and Transco and NYPA will each ensure that there is no duplicative recovery of Project costs. Mr. Caso describes in his testimony the mechanism Transco will utilize to ensure that the Project costs are appropriately allocated between Transco and NYPA with no opportunity for either Transco or NYPA to recover the same costs through their respective formula rates.

V. Description of NYISO Public Policy Transmission Planning Process, Public Policy Transmission Need Determination, and NYISO Competitive Solicitation

Q 15. PLEASE BRIEFLY DESCRIBE THE NYISO PUBLIC POLICY TRANSMISSION PLANNING PROCESS.

A 15. In response to Order No. 1000, the NYISO developed the PPTPP which was subsequently approved by FERC and is fully described in Section 31.4 of Attachment Y in the NYISO OATT. The PPTPP is NYISO's planning process to consider Public Policy Requirements that drive the need for expansions or upgrades to the Bulk Power Transmission Facilities ("BPTFs"). A Public Policy Requirement is defined as:

> A federal or New York State statute or regulation, including a [NYPSC] order adopting a rule or regulation subject to and in accordance with the State Administrative Procedure Act, any successor statute, or any duly enacted law or

regulation passed by a local governmental entity in New York State, that may relate to transmission planning on the BPTFs.[3]

The NYISO PPTPP process is designed to:

1. Allow Market Participants and other interested parties to propose transmission needs that they believe are being driven by Public Policy Requirements and for which transmission solutions should be evaluated;

2. Authorize the NYPSC, with input from the NYISO, Market Participants, and other interested parties, to consider and identify the PPTNs for which transmission solutions should be evaluated;

3. Require the NYISO to solicit proposals for Public Policy Transmission Projects ("PPTPs") and Other Public Policy Projects that satisfy each identified PPTN and evaluate the proposals on a comparable basis;

4. Provide a process by which the NYISO may select the more efficient or cost effective regulated PPTP to satisfy each identified PPTN for eligibility for cost allocation under the NYISO Tariffs and will designate the selected PPTP or parts of the selected PTPP to a Designated Entity or Designated Entities, which will be responsible for developing the Designated Public Policy Project(s); and

5. Provide a cost allocation methodology for the regulated Designated Public Policy Project(s) that have been selected by the NYISO.[4]

Q 16. DID THE NYPSC IDENTIFY A PPTN AS PART OF THE NYISO PPTPP?

A 16. Yes. NYISO conducts the PPTPP on a two-year cycle. In accordance with the requirements of the Tariff, on August 3, 2020, the NYISO opened a 60-day period inviting stakeholders and interested parties to submit proposed transmission needs driven by Public Policy Requirements and for which transmission solutions should be requested and evaluated. In response to this request, the NYISO received proposals for transmission needs driven by Public Policy Requirements from fifteen entities. Many of the proposals

[3] NYISO OATT, Attachment Y, Section 31.1.1.

[4] NYISO OATT, Attachment Y, Section 31.1.5.

identified both the New York Clean Energy Standard ("CES") and New York Climate Leadership and Community Protection Act of 2019 ("CLCPA"), which requires development of 9,000 MW of offshore wind power by 2035, as Public Policy Requirements driving the need for additional electric transmission. The NYISO posted the proposals on its website and filed those proposals at the NYPSC on October 9, 2020. Also on that date, the NYISO submitted to the Long Island Power Authority ("LIPA") ten proposals for transmission needs that, as proposed, would require a physical modification to transmission facilities in the Long Island Transmission District. On February 3, 2021, LIPA referred to the NYPSC a PPTN for the delivery of offshore wind output on Long Island and from Long Island into New York City.

The NYPSC published the proposed needs in the State Register for comments in accordance with the State Administrative Procedure Act. Following the public comment period, the NYPSC issued an order on March 19, 2021 in which it determined that the CLCPA constitutes a Public Policy Requirement driving the need for:

- Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the State; and

- Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.

This NYPSC PPTN determination has become known as the Long Island PPTN. As part of its order, the NYPSC referred the Long Island PPTN back to the NYISO to conduct a competitive solicitation seeking solutions for increasing the transmission capability from Long Island into southeastern New York. I have attached the March 19, 2021, NYPSC PPTN Order as Exhibit No. TRANSCO-101.

Q 17. DID THE NYPSC INCLUDE ANY ADDITIONAL CRITERIA FOR THE EVALUATION OF TRANSMISSION SOLUTIONS TO ADDRESS THE PPTN?

A 17. Yes. The NYISO Tariff permits the NYPSC to include additional criteria to assist the NYISO in the evaluation of transmission solutions and non-transmission projects. In the Long Island PPTN Order (Exhibit No. TRANSCO-101), the NYPSC mandated that NYISO's analysis ensure "no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions." The NYPSC also mandated that the NYISO ensure "that the system would be maintained in a reliable manner." Finally, the NYPSC determined the appropriate cost allocation mechanism to New York ratepayers that I will describe further below.

Q 18. DID THE NYISO CONDUCT A COMPETITIVE SOLICITATION?

A 18. On August 12, 2021, the NYISO officially opened a solicitation for submission of PPTPs and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need for evaluation in the NYISO's PPTPP. The NYISO solicitation letter is included as Exhibit No. TRANSCO-102.

Q 19. WAS THE PROJECT CONCEPT CREATED IN RESPONSE TO THIS NYISO SOLICITATION?

A 19. Yes. I should start by saying that, from the beginning, we recognized that the Long Island PPTN is a significant electric transmission need determination. The greater New York City area and surrounding suburbs, including western Long Island, are extremely congested areas, both in terms of people, roads and structures, as well as the electrical configuration of existing electric and other utility assets, including water, gas, telecommunications, etc. The NYPSC identified a need for transmission solutions to facilitate the interconnection of 3 Gigawatts ("GW") of offshore wind development to facilities on Long Island and that

would allow that energy to be transmitted to New York City and points upstate. This is a colossal task in its own right.

Q 20. IS THAT THE REASON TRANSCO DECIDED TO JOINTLY PROPOSE PROJECTS WITH NYPA?

A 20. That is one of the reasons, yes. With Transco's and NYPA's combined technical knowledge of the system and experience with development of transmission in New York, stakeholder and affected community relationships, and NYPA's ownership of some key transmission facilities in the area of project analysis, Transco and NYPA both determined that a collective effort would result in offering among the most efficient and cost effective solution for New York ratepayers.

Q 21. BRIEFLY DESCRIBE TRANSCO'S DEVELOPMENT OF PROJECT PROPOSALS AND PARTICIPATION IN THE COMPETITIVE SOLICITATION.

A 21. In response to the NYISO's open solicitation, Transco and NYPA jointly prepared several transmission solutions that would address the Long Island PPTN. Transco and NYPA ultimately developed and submitted seven proposals, each with varying project components.

Q 22. DID NYISO CONSIDER EACH OF THE TRANSCO/NYPA PROJECT SUBMISSIONS?

A 22. Yes, the NYISO received a total of nineteen project proposals from four different project developers. In accordance with its Tariff, NYISO first conducted the Viability and Sufficiency Assessment for each project submission. The Viability & Sufficiency Assessment is a pass/fail test to screen each of the nineteen proposed projects as to whether a project is capable of satisfying the minimum criteria of the Long Island PPTN. NYISO determined that sixteen of the project proposals submitted by three different project

developers (including six of the seven Transco/NYPA project proposals) met the viability and sufficiency analysis.

Next, the NYISO conducted project evaluations utilizing multiple metrics identified both in the NYISO Tariff and in the NYPSC Long Island PPTN Order. The process for the evaluation of proposed solutions is described in the NYISO Public Policy Transmission Planning Process Manual.[5]

Q 23. WAS THE PROJECT RECOMMENDED BY NYISO AS THE MORE EFFICIENT OR COST EFFECTIVE SOLUTION?

A 23. Yes it was. Following a comprehensive analysis of all the evaluation metrics for efficiency or cost-effectiveness and performing a detailed comparative review among the project submissions from each developer based on the satisfaction of those metrics, the NYISO staff recommended that the NYISO Board of Directors select Propel NY Energy's T051 Alternate 5 proposal (the Propel NY Energy Project) as the more efficient or cost-effective transmission solution to satisfy the Long Island PPTN for purposes of cost allocation and recovery under the OATT.

Q 24. DID THE NYISO BOARD OF DIRECTORS SELECT THE PROJECT AS THE MORE EFFICIENT OR COST EFFECTIVE SOLUTION?

A 24. Yes. At its June 13, 2023, meeting, the Board of Directors of the NYISO selected the Propel NY Energy Project as the more efficient or cost-effective solution to the Long Island PPTN. This decision was announced in a June 20, 2023, press release issued by the NYISO. The NYISO Board of Directors' Decision on Approval of Long Island Offshore

[5] NYISO Manual 36: Public Policy Transmission Planning Process Manual (June 8, 2020), available at: https://www.nyiso.com/documents/20142/2924447/M-36_Public%20Policy%20Manual_v1_0_Final.pdf.

Wind Export Public Policy Transmission Planning Report and Selection of Public Policy Transmission Project is attached as Exhibit No. TRANSCO-103.

Q 25. WAS THE PROJECT ULTIMATELY INCLUDED IN THE NYISO TRANSMISSION PLAN?

A 25. Yes. The NYISO issued the Long Island Offshore Wind Export Public Policy Transmission Plan ("NYISO Public Policy Transmission Plan"), dated June 13, 2023, which includes the Board of Directors' Decision; the Long Island Offshore Wind Export Public Policy Transmission Planning Report; NYISO's comprehensive analysis recommending the Project as the more efficient or cost effective solution; and, the relevant Appendices supporting the NYISO analysis. The NYISO Public Policy Transmission Plan is attached as Exhibit No. TRANSCO-104.

VI. Incentive Rate Treatments Requested

Q 26. IS TRANSCO REQUESTING INCENTIVE RATE TREATMENTS FOR ITS INVESTMENT IN THE PROJECT?

A 26. Yes, the Project qualifies for transmission incentive rate treatments in accordance with the Commission's policies under Order No. 679. The Project is an extremely complicated and complex underground and submarine electric transmission project that requires significant capital investment. Transco has carefully chosen the appropriate incentive rate treatments that best address the specific risks and challenges associated with the development of a project of this size and scope.

Q 27. PLEASE DESCRIBE THE INCENTIVE RATE TREATMENTS THAT TRANSCO IS REQUESTING FOR THE PROJECT.

A 27. Consistent with Commission orders granting requests for incentive rate treatments for other proposed large-scale transmission projects, and the Commission's Order No. 679 and Policy Statement (*Promoting Transmission Investment Through Pricing Reform*, 141

FERC ¶ 61,129 (2012)), Transco is requesting that the Commission approve the following incentive rate treatments for the Project:

1. Abandoned Plant Incentive: Transco requests the right to recover prudently-incurred investment in the Project in the event the Project must be abandoned for reasons outside the control of Transco. If the Project is abandoned at any time, Transco expects to demonstrate prudence of the Project's costs through a future Federal Power Act Section 205 filing.
2. RTO Participation Adder: Transco seeks a 50 basis point adder to its base ROE component for its investment in the Project for Transco's voluntary participation in NYISO. The Project will be under the operational control of the NYISO once it is completed and placed in-service.
3. ROE Risk Adder: Transco seeks a 150 basis point adder to its base ROE component to compensate for the significant risks and challenges associated with the development of the Project, one of the largest underground/submarine projects in a significantly dense urban and suburban area, and in recognition of its significant benefits.
4. Construction Work In Progress: Transco seeks inclusion of 100% of CWIP in rate base during the development and construction phase of the Project.

Q 28. WHAT MUST TRANSCO DEMONSTRATE IN ORDER TO HAVE THE TRANSMISSION RATE INCENTIVES APPROVED BY THE FERC?

A 28. I understand that Order No. 679 requires an applicant to demonstrate that the proposed transmission project will either ensure reliability or reduce the cost of delivered power by reducing transmission congestion. In Order No. 679, the Commission established a

rebuttable presumption that this standard is met if: (1) the transmission project results from a fair and open regional planning process that considers and evaluates the project for reliability and/or congestion; or (2) the transmission project has received construction approval from an appropriate state commission or state siting authority. Transco must also demonstrate that the total package of incentives requested is tailored to address the demonstrable risks or challenges faced by the applicant in undertaking the project (i.e., the "nexus" test).

Q 29. IS THE PROJECT COVERED BY THE REBUTTABLE PRESUMPTION?

A 29. Yes. The Project emanates from the NYISO's Commission-approved Public Policy Transmission Planning Process. As I noted above, the NYISO conducted a Viability & Sufficiency Assessment to determine whether the Project is capable of satisfying the minimum criteria of the Long Island PPTN analysis which includes the NYPSC's directive to ensure "no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions" and that the system be "maintained in a reliable manner." Moreover, the NYISO Board of Directors' decision notes that the Propel NY Energy Project "*will relieve transmission congestion* and provide a myriad of additional economic and performance benefits such as, but not limited to, increased operational flexibility, *improved transmission system resiliency*, reduced emissions from curtailments due to transmission system congestion, and the policy objectives on the part of New York State." Exh. No. TRANSCO-103 at p. 6 (emphasis added).

Q 30. IS THE TOTAL PACKAGE OF INCENTIVES NARROWLY TAILORED TO ADDRESS THE DEMONSTRABLE RISKS AND CHALLENGES ASSOCIATED WITH THE DEVELOPMENT OF THE PROJECT?

A 30. Yes. Transco has narrowly tailored the package of incentive rate treatments to address the demonstrable risks and challenges associated with the development of the Project. In addition to my testimony, Mr. Haering, Mr. Cole-Hatchard, Jr., Mr. Caso, Mr. Tsoukalis, and Mr. McKenzie all describe the significant risks and challenges Transco faces in developing the Project and the impact these risks have on Transco's ability to construct the Project on-time and within the initial cost estimate given Transco's commitment to the cost containment mechanism. Simply put, the Project is a massive undertaking: the Project requires four new substations and the conductor work consists entirely of underground and submarine cabling; it has an estimated cost of $2.7 billion of which Transco will fund no less than 70% of project costs; all Project work will occur in heavily congested areas of Queens, Bronx, Westchester, Nassau and Suffolk Counties; there are significant risks and challenges Transco faces in the development of the project, including obtaining the necessary permits, procurement, construction, labor, and other risk metrics; and, all work must be completed by May 2030. The incentive rate treatments requested here are all necessary to adequately address these risks and challenges, and will only apply to Transco's investment responsibility in the Project. For planning purposes, Transco is currently estimating that its investment responsibility for the Project will be $2.2 billion. Transco and NYPA will determine final ownership shares closer to Project completion.

Q 31. IS NYPA SEEKING INCENTIVE RATE TREATMENTS FOR ITS INVESTMENT IN THE PROJECT?

A 31. I believe NYPA will independently seek incentive rate treatments for its investment in the Project. I understand that NYPA has already submitted in Docket No. EL23-96-000 a Petition for Declaratory Order seeking the abandonment incentive in the event the Project

is abandoned for reasons outside the control of NYPA. NYPA may also seek additional incentive rate treatments.

VII. Support for the Abandoned Plant Incentive

Q 32. PLEASE DESCRIBE THE ABANDONED PLANT INCENTIVE.

A 32. Transco requests the right to recover prudently-incurred investment in the Project in the event the Project must be abandoned for reasons outside the control of Transco. The Abandoned Plant Incentive is designed to mitigate the risks associated with recovery of significant amounts of capital if the Project were to be abandoned for reasons outside the control of the developer. There are a myriad of reasons the Project could be abandoned: the NYPSC could ultimately determine that the Project is not necessary to meet the Long Island PPTN, Transco may not be able to obtain all the necessary permits and local allowances to construct the Project, or NYISO could terminate the Project in accordance with the terms of its Tariff or the Development Agreement for the Project. In addition, Transco will need to obtain significant amounts of financing to build the Project (as described in Mr. Caso's testimony). The Abandoned Plant Incentive will allow Transco to maintain a favorable credit rating and assuage the concerns of lenders of having to bear the costs in the event the project is abandoned for reasons beyond the control of Transco.

The Abandoned Plant Incentive would only apply in the event Transco needs to abandon project development activities for reasons outside its control. Mr. Haering describes the significant effort Transco will undertake to obtain all necessary permits for the development of the Project. Mr. Cole-Hatchard, Jr., describes the significant procurement and construction challenges in competing a project of this size and scope. The NYPSC itself could ultimately determine that there is no longer a need for the project. At

any step during the development cycle, reasons beyond Transco's control could implicate Transco's ability to complete project development. The Abandoned Plant Incentive specifically addresses this risk and there is no other mechanism Transco can deploy to adequately mitigate this risk.

Q 33. WILL TRANSCO NEED TO MAKE AN ADDITIONAL FILING TO RECOVER ABANDONMENT COSTS?

A 33. Approval of the Abandoned Plant Incentive is not self-executing. If the Project is abandoned at any time, Transco expects to demonstrate prudence of the Project's costs through a future Federal Power Act Section 205 filing. Transco expects to coordinate any Section 205 filing with NYPA so that the collective abandonment recovery filings do not seek duplicative cost recovery.

VIII. Support for the RTO Participation Adder

Q 34. PLEASE DESCRIBE THE RTO PARTICIPATION ADDER.

A 34. Transco requests a 50 basis point adder to its base ROE component for its voluntary participation in NYISO and the expected transfer of operational control of the Project to NYISO once the Project is completed and placed in-service.

Q 35. IS TRANSCO A VOLUNTARY MEMBER OF NYISO?

A 35. Yes, Transco is a voluntary member of NYISO. There is no state law or other requirement for Transco to be a transmission-owning member of NYISO.

Q 36. HAS THE COMMISSION DETERMINED THAT OTHER NEW YORK TRANSMISSION OWNERS ARE VOLUNTARY MEMBERS OF NYISO AND ELIGIBLE FOR THE RTO PARTICIPATION ADDER?

A 36. Yes. For instance, in Docket No. ER16-2719, the Commission found that NextEra Energy Transmission New York, Inc. ("NextEra") is eligible for the RTO Participation Adder as a voluntary member of NYISO. In Docket No. ER20-716, the Commission also granted LS

Power Grid New York Corporation Inc.'s ("LS Power") request for the RTO Participation Adder and conditioned approval on the transmission provider joining NYISO.[6]

Q 37. DOES TRANSCO CURRENTLY HAVE AN RTO PARTICIPATION ADDER IN EFFECT IN ITS FORMULA RATE?

A 37. No it does not. When Transco filed its Formula Rate in Docket No. ER15-572-000, Transco also requested incentive rate treatments for its investment in the TOTS and Segment B projects. In its order, the Commission approved Transco's request to include a 50 basis point adder in rates for RTO participation. However, Transco and interested parties entered into two separate settlement agreements to account for how costs associated with the TOTS and Segment B projects would be recovered through rates, respectively. As part of both settlements, Transco agreed to not include the RTO Participation Adder in its Formula Rate and instead agreed with the Parties to other ROE risk adders, including a 50 basis point adder for both the TOTS and Segment B projects to account for congestion relief, and an additional 50 basis point adder for the Segment B project to compensate Transco for the significant risks and challenges associated with the development of that project.

Q 38. IS TRANSCO REQUESTING TO APPLY THE RTO PARTICIPATION ADDER TO ALL OF ITS TRANSMISSION INVESTMENT?

A 38. No, Transco is requesting the RTO Participation Adder only for its investment in the Propel NY Energy Project. The RTO Participation Adder will not apply generally to all of

[6] Both NextEra and LS Power ultimately entered into settlement agreements that removed the RTO Participation Adder from their formula rate recovery. Both settlements included other ROE incentive adders for the risks and challenges associated with project development and project benefits.

Transco's transmission investments (e.g., for the TOTS or NYES projects). Those projects will maintain the ROE adder incentives agreed to in settlement.

Q 39. DO THE TRANSCO RATE SETTLEMENTS YOU MENTION ABOVE PRECLUDE THE ABILITY FOR TRANSCO TO REQUEST THE RTO PARTICIPATION ADDER FOR THE PROPEL NY ENERGY PROJECT?

A 39. No, the two settlements that Transco entered into in Docket No. ER15-572 for the TOTS project and the Segment B project established the base ROE levels and incentive ROE adders for those two projects. The settlements did not limit the ability for Transco to request ROE adders for future projects, whether based on RTO participation or for risks and challenges in developing the project. Indeed, the settlements contemplated the need for Transco to file for an allowable ROE that would apply to any future project, which is what Transco is doing in this filing.

IX. Project Cost Allocation

Q 40. DID THE NYPSC PROPOSE A PREFERRED COST ALLOCATION APPROACH FOR THE LONG ISLAND PPTN?

A 40. Yes it did. On May 16, 2022, the NYPSC determined that the cost allocation formula associated with the Long Island PPTN should be based entirely on a statewide volumetric load-ratio share, in part because the project is needed to meet statewide CLCPA goals. This statewide volumetric load-ratio share cost allocation mechanism has become the default cost allocation mechanism for all CLCPA-related, eligible projects under the NYISO OATT, as memorialized in Section 6.19 of the Tariff. The Rehearing Order is included as Exhibit No. TRANSCO-105.

Q 41. IS THIS THE COST ALLOCATION APPROACH PROPOSED BY TRANSCO?

A 41. Yes. Transco proposes to adopt the NYPSC preferred cost allocation approach and requests approval to allocate costs for the Project on a statewide volumetric load-ratio share basis.

Q 42. DOES TRANSCO PROPOSE TO INCLUDE THIS COST ALLOCATION APPROACH IN TRANSCO'S FORMULA RATE?

A 42. Yes. Transco proposes to include a new Section 36.2.1.3 in Section 36 of Attachment DD of the NYISO OATT that states:

> The costs associated with the Propel New York Energy Project will be allocated in accordance with Section 31.5.5.4.3 of Attachment Y to the ISO OATT, calculated volumetrically based on Actual Energy Withdrawals by all Load Serving Entities, but excluding Withdrawal Billing Units for Exports and Wheels Through.

Q 43. DOES THIS CONCLUDE YOUR TESTIMONY?

A 43. Yes, this concludes my testimony.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Transco, LLC	**)**	**Docket No. ER24-____-000**

AFFIDAVIT OF VICTOR MULLIN

Pursuant to 28 U.S.C. § 1746, I, Victor Mullin, under penalty of perjury, state under oath that the information contained in the foregoing "Prepared Direct Testimony of Victor Mullin" on behalf of New York Transco, LLC is true, correct, accurate, and complete to the best of my knowledge and belief.

Executed this 17 day of October 2023

Victor Mullin

Victor Mullin

Exhibit No. TRANSCO-101

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of Albany on March 18, 2021

COMMISSIONERS PRESENT:

John B. Howard, Interim Chair
Diane X. Burman, concurring
James S. Alesi
Tracey A. Edwards

CASE 20-E-0497 - In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2020.

CASE 18-E-0623 - In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2018.

ORDER ADDRESSING PUBLIC POLICY REQUIREMENTS FOR TRANSMISSION PLANNING PURPOSES

(Issued and Effective March 19, 2021)

BY THE COMMISSION:

INTRODUCTION

On August 3, 2020, the New York Independent System Operator, Inc. (NYISO) commenced a new round of the biennial Public Policy Transmission Planning Process specified under Attachment Y of its Open Access Transmission Tariff (OATT) by requesting interested entities to identify potential transmission needs that may be driven by Public Policy Requirements. Under this process, the Public Service Commission (Commission) considers the input provided by interested entities and may identify any Public Policy Requirements that may be driving the need for additional transmission facilities within the State. In the event the Commission identifies such a Public

Policy Requirement, referred to as a Public Policy Transmission Need, the NYISO will solicit and evaluate potential solutions proposed by developers. After undertaking a full evaluation of the proposed solutions, the NYISO Board of Directors (NYISO Board) may select the most cost effective or efficient solution(s) to meet the Public Policy Transmission Need, which allows the developer(s) to receive cost recovery under the OATT.[1]

In response to the NYISO's recent request for potential Public Policy Requirements, it received various proposals from fifteen entities and filed them with the Commission on October 9, 2020, in Case 20-E-0497 (2020 NYISO Filing). In accordance with the coordinated planning process under the OATT, the NYISO provided the same proposals to the Long Island Power Authority (LIPA). Among the responses, PSEG Long Island, LLC (PSEG-LI) – LIPA's service provider – proposed a transmission need driven by the 9,000 megawatt (MW) mandate established pursuant to the Climate Leadership and Community Protection Act (CLCPA).[2] Specifically, PSEG-LI asserts that new transmission infrastructure would need to be built in the Long Island to New York City corridor to enable as much as 3,000 MW (of the 9,000 MW total) of offshore wind energy on the Long Island electrical network to be transmitted off of the island.[3] Several other interested entities, including the New York Power Authority (NYPA), the New York City Mayor's Office of

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[1] The capitalized terms used above are defined in the NYISO's OATT, Attachment Y, §31.1.1. The NYISO's Public Policy Transmission Planning Process is contained in Attachment Y of the OATT, §31.4, et seq.

[2] Ch. 106 of the Laws of 2019 (codified, in part, in Public Service Law (PSL) §66-p).

[3] See Response from PSEG-LI, dated October 2, 2020, p. 2.

Sustainability (NYC), Con Edison Transmission (Con Edison), New York Transco LLC (Transco), and Anbaric Development Partners LLC (Anbaric) also proposed the 9,000 MW offshore wind mandate established under the CLCPA as driving the need for transmission in the same general area.

On February 3, 2021, LIPA filed with the Commission its determination that a Public Policy Requirement exists with respect to the Long Island Transmission District.[4] Specifically, LIPA identifies the CLCPA as driving two related transmission needs, including:

1) Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Load Zone K (Long Island) to Zones I and J (Westchester County and New York City, respectively); and

2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore wind export capability which LIPA asserts should include increasing capacity on portions of the existing 138 kV transmission "backbone" on the Long Island system between the Ruland Road and East Garden City substations to 345 kV.

LIPA recommends that the Commission issue an order finding that the identified transmission needs are driven by a duly adopted Public Policy Requirement (i.e., the 9,000 MW target under the CLCPA) so that a solution to the needs can be solicited by the NYISO and be eligible for statewide cost allocation and recovery under the OATT.

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[4] Id. §31.4.2.3. For any such proposed transmission needs, LIPA is required to first consult with DPS Staff and then "issue a written statement explaining whether a Public Policy Requirement does or does not drive the need for a physical modification to transmission facilities solely within the Long Island Transmission District, and describing" such consultation.

In this Order, the Commission finds that certain aspects of the CLCPA regarding offshore wind are driving the need for additional transmission facilities between Long Island and New York City, and therefore constitute a Public Policy Requirement. In particular, the CLCPA requires the Commission to establish programs whereby (1) a minimum of 70 percent of electricity is derived from renewable sources by 2030 (referred to as the 70 by 30 mandate), and (2) at least 9,000 MW of offshore wind is procured by 2035.[5] We refer the identified Public Policy Requirement to the NYISO for the solicitation of potential solutions and the preparation of analyses related to those solutions. As authorized under the OATT, this Order provides additional criteria for the evaluation of transmission solutions and identifies a preferred cost allocation approach.[6] This Order also addresses the other proposed transmission needs driven by potential Public Policy Requirements contained in the 2020 NYISO Filing, as well as those pending before the Commission in Case 18-E-0623 related to the NYISO's 2018 solicitation for suggested needs. As discussed below, the Commission declines to identify additional Public Policy Requirements driving the need for transmission facilities at this time.

BACKGROUND

The Public Policy Transmission Planning Process

The NYISO developed its Public Policy Transmission Planning Process to comply with the Federal Energy Regulatory Commission's (FERC) Order No. 1000, which required, in part, the

[5] See L. 2019, ch. 106, §4 (enacting Public Service Law §66-p(2), (5)).

[6] Id. §31.4.2.1.

development of a planning process for the consideration of public policy-driven transmission needs.[7] Through a series of compliance filings, the NYISO and New York Transmission Owners submitted tariff revisions to amend the OATT to include this new planning process, which is conducted on a two-year cycle.

As approved by FERC, the NYISO's Public Policy Transmission Planning Process commences with a 60-day solicitation period for any interested entities to identify proposed transmission needs that are potentially being driven by Public Policy Requirements.[8] The NYISO posts all submittals on its website and forwards them for the Commission's consideration. The Commission is assigned the role of identifying any Public Policy Requirements that may be driving the need for transmission facilities, while LIPA is responsible for identifying transmission needs driven by Public Policy Requirements within the Long Island Transmission District. The NYISO OATT also provides for the Commission to act "out-of-cycle" with the biennial process.

The NYISO OATT defines a Public Policy Requirement as:

> [a] federal or New York State statute or regulation, including [an order issued by the Commission] adopting a rule or regulation subject to and in accordance with the State Administrative Procedure Act, any successor statute, or any duly enacted law or regulation passed by a local governmental entity in New York State, that may relate to transmission planning on the [Bulk Power Transmission Facilities].[9]

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[7] See Docket No. RM10-23-000, Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Order No. 1000 (issued July 21, 2011), reh'g denied, Order No. 1000-A (issued May 17, 2012), reh'g denied, Order No. 1000-B (issued October 18, 2012).

[8] NYISO OATT, Attachment Y, §31.4.2.

[9] NYISO OATT, Attachment Y, §31.1.1.

The Commission's August 2014 Policy Statement established procedures for identifying any Public Policy Requirements that warrant the NYISO soliciting solutions for evaluation.[10] These procedures, which act in concert with the NYISO's process, include:

1) the NYISO submitting the proposed Public Policy Requirements that interested entities have identified regarding potential transmission needs, which the Commission will post on its website;

2) the Commission issuing a notice in the State Register, pursuant to SAPA, inviting comments on any proposals posted in Step 1, along with any subsequent additions identified by the Commission, and any proposed evaluation criteria the NYISO should apply and analyses it should perform;

3) Department of Public Service Staff (Staff) posting, when deemed appropriate, preliminary comments for interested parties to review and comment upon, addressing why any proposed Public Policy Requirements warrant, or do not warrant, the NYISO soliciting projects for evaluation;

4) the Commission issuing an order identifying the potential transmission needs, based on Public Policy Requirements, that warrant the NYISO soliciting solutions (along with an explanation of proposed Public Policy Requirements that do not warrant referral to the NYISO), and an identification of any proposed evaluation criteria the NYISO should apply and analyses it should perform;[11] and,

[10] Case 14-E-0068, Policies and Procedures Regarding Transmission Planning for Public Policy Purposes, Policy Statement on Transmission Planning for Public Policy Purposes (issued August 15, 2014) (August 2014 Policy Statement).

[11] The Commission may also find that none of the suggested policies constitute Public Policy Requirements, or that transmission is not needed to address them.

5) the Commission posting the Order, issued under Step 4, on its website and providing it to the NYISO.[12]

Following these steps, the NYISO holds a technical conference and then undertakes a second 60-day solicitation for proposed solutions to any Commission-identified Public Policy Requirements/Public Policy Transmission Needs. The NYISO then conducts a preliminary analysis regarding whether each proposed solution is viable and sufficient to meet the Public Policy Transmission Need. When evaluating proposed solutions to a Public Policy Transmission Need, the NYISO considers, on a comparable basis, all resource types, including generation, transmission, demand response, or a combination of these resource types. The NYISO presents the results of its Viability and Sufficiency Assessment to stakeholders, interested parties, and Department of Public Service Staff for review and comment.

The NYISO also files the final Viability and Sufficiency Assessment with the Commission. While the sixth and final step identified in the August 2014 Policy Statement required the Commission to confirm that a transmission solution should continue to be pursued before the NYISO proceeded to prepare further analyses, the NYISO tariff was subsequently amended to allow the NYISO to proceed directly to a full evaluation of transmission solutions deemed viable and sufficient. However, the NYISO tariff retained the ability of the Commission to still determine that a transmission need

[12] The NYISO's OATT indicates that the Commission's procedures should "ensure that such process is open and transparent, provide the ISO and interested parties a meaningful opportunity to participate in such process, provide input regarding the NYPSC's considerations, and result in the development of a written determination as required by law, inclusive of the input provided by the ISO and interested parties." NYISO OATT, Attachment Y, §31.4.2.1.

should no longer be evaluated or selected by the NYISO, so long as the Commission acts prior to the NYISO Board's selection of a more efficient or cost-effective transmission solution.

Absent Commission action terminating the Public Policy Transmission Planning Process, the NYISO proceeds to provide its analyses in a Public Policy Transmission Planning Report. The NYISO Board may also select the more efficient or cost-effective transmission solution to the identified Public Policy Transmission Need, based on various metrics specified under its OATT.[13] The NYISO would also include, to the extent it is feasible, any criteria or analyses specified by the Commission or contained within the Public Policy Requirement. Transmission projects selected by the NYISO are eligible for cost allocation and recovery under the NYISO's OATT.

The 2020 Public Policy Transmission Planning Cycle

As noted above, the NYISO commenced a new round of its biennial Public Policy Transmission Planning Process by soliciting, on August 3, 2020, proposed Public Policy Requirements from interested entities. The 2020 NYISO Filing, which was submitted to the Commission on October 9, 2020, identified various proposed Public Policy Requirements received from fifteen entities: PSEG-LI, NYC, New York Transmission

[13] In determining which transmission solution is the more efficient or cost-effective, the NYISO considers several metrics, including: cost estimates, cost per MW ratio, expandability of the project, flexibility in operating the system (such as generation dispatch, access to operating reserves and ancillary services, or ability to remove transmission for maintenance), utilization of the system (such as interface flows or percent loading of facilities), a developer's property rights, potential construction delays, and impacts on NYISO-administered markets. NYISO's OATT, Attachment Y, §31.4.5.1.

Owners (NYTOs),[14] Con Edison, Transco, LS Power Grid New York, LLC (LS Power), NYPA, Anbaric, H.Q. Energy Services (U.S.) Inc. (HQUS), Invenergy LLC (Invenergy), Avangrid, Inc. (Avangrid), NextEra Energy Transmission New York (NextEra), Transource Energy, LLC (Transource), Orsted U.S. Offshore Wind (Orsted), and EDF Renewables (EDF). Each of these parties' responses is summarized next.

1. PSEG-LI

PSEG-LI identified the 9,000 MW offshore wind mandate under the CLCPA, as well as the requirements of the Accelerated Renewable Energy Growth and Community Benefit Act (Accelerated Renewables Act)[15] as driving the need for enhancements on the Long Island system to enable energy from offshore wind generation facilities to be delivered to loads across Long Island and elsewhere in New York State. PSEG-LI identified two transmission needs driven by the 9,000 MW mandate:

1) The addition of at least one bulk transmission Phase Angle Regulator (PAR)-controlled intertie cable to increase the export capability of the LIPA-Con Edison interface, which connects NYISO Zone K to Zones I and J; and

2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore wind export capability. Such upgrades would include portions of the existing 138 kV transmission "backbone" between the Ruland Road and East Garden City substations to 345 kV, as well as a need to enhance the ability to move power from eastern Long Island to western Long Island through the creation of a new 138kV bulk transmission path along the corridor connecting the Brookhaven and Ruland Road substations.

[14] The NYTOs include: Central Hudson Gas & Electric Corp.; Consolidated Edison Company of New York, Inc.; Niagara Mohawk Power Corporation d/b/a/ National Grid; NYPA; New York State Electric & Gas Corp.; Orange & Rockland Utilities; and Rochester Gas & Electric Company.

[15] L. 2020, ch. 58, Part JJJ, §7.

PSEG-LI notes that any delay with respect to these projects may impact the ability to achieve the State's renewable energy goals and timeline for transition, as mandated under the CLCPA.

2. New York City

NYC proposes several public policies that it asserts are driving the need for transmission into Zone J, including: (1) the 70 by 30 mandate under the CLCPA; (2) the requirement for the Commission to undertake a bulk transmission study under the Accelerated Renewables Act; (3) regulations adopted under 6 NYCRR Part 227-3 (the "Peaker Rule"), adopted on January 16, 2020, by the New York State Department of Environmental Conservation (NYSDEC), which limits the emissions of nitrogen oxides (NO_x) from power plants during the ozone season; and (4) the Climate Mobilization Act, enacted by NYC in 2019, which limits greenhouse gas (GHG) emissions from, among other sources, large buildings. As for associated transmission needs, NYC emphasizes the importance of building a transmission connection from large-scale dispatchable hydropower resources in Quebec, Canada into Zone J (i.e., New York City) to replace the significant capacity of fossil fuel generation expected to retire in the coming years. NYC also identifies a series of onshore transmission needs both in NYC and between NYC and Long Island to transmit to load the 9,000 MW or more of offshore wind capacity expected to come online over the next decade.

3. The NYTOs

The NYTOs point to CLCPA-based mandates, the NYC Climate Mobilization Act, the Accelerated Renewables Act, and NYSDEC Peaker Rule as potential Public Policy Requirements. As for specific transmission needs, the NYTOs cites to several recently completed studies, including the 70 by 30 mandate

scenario examined in the NYISO's Congestion Assessment and Resource Integration Study (2019 CARIS Study), dated July 24, 2020, which the NYTOs assert identified several load pockets across the State with various levels of energy curtailment due to transmission system constraints. The NYTOs note that absent transmission system enhancements, the Central East interface would continue to be the most congested interface in the New York Control Area, given the need to transfer power from the upstate nuclear power plants, NYPA's large hydropower plants in Niagara and St. Lawrence, and the significant amount of land-based wind interconnecting in the many remote regions of upstate New York, as well as the need for offshore wind to flow in the reverse direction. The NYTOs also recommend that the Commission act quickly to identify and authorize the development of transmission needed to integrate new offshore wind generation into New York City, Long Island, and potentially the mid-Hudson Valley and upstate regions.

4. Con Edison

Like other parties, Con Edison identifies the 9,000 MW offshore wind target under the CLCPA as a Public Policy Requirement driving transmission needs. As for specific transmission needs, Con Edison specified that shared offshore transmission facilities, as well as transmission to improve power flows between Zone K and Zone I and/or Zone J, are necessary to successfully and cost effectively meet the 9,000 MW offshore wind target under the CLCPA. Con Edison also notes that Long Island is well suited to receive offshore wind but does not have sufficient customer demand or transmission to allow that energy to flow through Zone J and further upstate.

5. Transco

Transco cites to the CLCPA as the basis for five separate transmission needs:

(1) Western New York: Improvements to alleviate constraints within the region and across the Dysinger East and West Central interfaces;

(2) North Country: Improvements to alleviate constraints within the region as well as across the Moses South and Central East interfaces;

(3) Southern Tier: Improvements to alleviate constraints within the region as well as the Volney East and Upstate New York (UPNY)/Southeast New York (SENY) interfaces;

(4) Capital Region: Improvements to alleviate constraints within the region as well as Central East and UPNY/SENY interfaces; and

(5) LIPA and Con Edison System: Improvements to alleviate constraints caused by significant amounts of offshore wind integration as well as needed increased export capability specifically across the Con Edison-LIPA and Dunwoodie South interfaces.

Transco notes that the proposed transmission needs are supported by the NYISO's 2019 CARIS Study, which identified several load pockets across the State with various levels of energy curtailment due to transmission system constraints.

6. LS Power

Like other parties, LS Power identifies the 70 by 30 and 9,000 MW offshore wind mandates under the CLCPA as driving several transmission needs. Citing several studies, LS Power stresses the need for the Commission to identify a series of Public Policy Transmission Needs from 2021-24, with each need targeting transmission improvements necessary for the delivery of energy from renewable resources with in-service dates from 2026-30. With respect to offshore wind, LS Power asserts that it

is inefficient for each developer to be responsible for connecting their resources into the bulk transmission system and that instead the Public Policy Transmission Planning Process should be used for overall interconnection and integration of offshore wind resources. LS Power also points to the need for inter-regional transmission based on the 2019 CARIS Study that it asserts identifies 21.7% to 25.5% of renewable energy generated in New York State being exported to other States.

7. NYPA

NYPA suggests several Public Policy Requirements driving transmission needs including the CLCPA, the Commission's 2016 Clean Energy Standard (CES) Order,[16] the City of New York's Local Law 97, and the Peaker Rule. NYPA cites to the 2019 CARIS Study issued by the NYISO as support for the need for transmission in five constrained areas that coincide with the areas identified by Transco in its response to the NYISO solicitation. Of these five areas, NYPA focuses on the need for a comprehensive build-out of transmission in the Southern Tier to accommodate renewable energy generation and connectivity between Western and downstate New York.

8. Anbaric

Anbaric identifies several of the CLCPA mandates and the transmission planning requirements specified under the Accelerated Renewables Act as potential Public Policy Requirements. As for transmission needs, the company asserts that additional onshore transmission upgrades are needed to prevent the occurrence of offshore wind curtailments once the full 9,000 MW of wind are operational, including investments in

[16] See Case 15-E-0302, Large-Scale Renewable Program and a Clean Energy Standard, Order Adopting a Clean Energy Standard (issued August 1, 2016) (2016 CES Order).

new transmission cables to move surplus offshore wind energy from Long Island to New York City and beyond on high wind, low demand days. Anbaric also notes that bolstering the interconnection between Staten Island and the rest of New York City and upstate would open up the 345 kV substations at Fresh Kills and Goethals as strong points of interconnection for offshore wind, easing the pressure on threading cables through the Narrows and Upper Bay of New York Harbor.

9. HQUS

HQUS also identifies the 70 by 30 mandate under the CLCPA as creating the need for new transmission to be developed between Quebec, Canada and New York City, which HQUS states represents an opportunity to provide up to 30% of New York City's remaining clean energy needs with a single project. HQUS notes that any Public Policy Transmission Need should also be designed in conjunction with the Tier 4 program included as part of the Commission's 2020 CES Order,[17] which applies to renewable energy delivered to New York City. HQUS notes that a Tier 4 contract paired with a Public Policy Transmission Need project could work jointly to ensure that the benefits of any new transmission project are fully captured, by ensuring that the renewable energy products that provide the most value to the State and New York City are delivered over the line. HQUS also identifies a transmission need related to increasing transmission capacity between Quebec, Canada and Upstate New York, which the company asserts would improve the ability of its resources to provide flexible deliveries and to act as a

[17] Case 15-E-0302, Large-Scale Renewable Program and a Clean Energy Standard, Order Adopting Modifications to the Clean Energy Standard (issued October 15, 2020) (2020 CES Order)

battery, allowing New York to more efficiently integrate higher penetrations of renewable generation into the State grid.

10. Other Responses

The remaining responses propose the same Public Policy Transmission Needs as those already summarized above. For example, Avangrid calls for the construction of offshore wind transmission infrastructure to allow for existing offshore wind projects to interconnect within a more robust network that avoids curtailments. Several parties, including NextEra, EDF, Invenergy, Orsted, and Transource support the finding of Public Policy Transmission Needs to address pockets of transmission constraints around the State that they assert were identified in the NYISO's 2019 CARIS Study.

The 2018 Public Policy Transmission Planning Cycle

On August 1, 2018, the NYISO solicited proposed Public Policy Requirements from interested entities. Fifteen entities provided responses to the NYISO's solicitation and were filed with the Commission on October 10, 2018 (2018 NYISO Filing). As noted below, the Commission sought public comments on these proposed Public Policy Requirements. The proposals submitted by each of the entities and the public comments received in relation to the 2018 NYISO Filing are summarized in Appendix A.

NOTICES OF PROPOSED RULEMAKING

In accordance with the State Administrative Procedure Act (SAPA) §202(1) and the Commission's August 2014 Policy Statement, a Notice of Proposed Rulemaking regarding the 2018 NYISO Filing was published in the State Register on November 21, 2018 [SAPA No. 18-E-0623SP1]. The time for submission of comments pursuant to the SAPA notice expired on January 22,

2019. The comments received in response to this notice are summarized in Appendix A and discussed below.

A separate SAPA notice regarding the 2020 NYISO Filing was published in the State Register on November 18, 2020 [SAPA No. 20-E-0497SP1]. The time for submission of comments pursuant to the SAPA notice expired on January 19, 2020. Timely public comments were filed by the NYISO, NYC, Con Edison, Transco, Avangrid, and Transource. The comments received in response to the notice are summarized and discussed below.

COMMENTS

NYISO

In its comments, the NYISO identifies the need to upgrade the bulk transmission system to deliver renewable energy from upstate generation pockets and offshore wind facilities connected to Long Island and New York City. The NYISO asserts that these transmission needs are demonstrated by numerous NYISO studies that have analyzed the system performance under different scenarios that meet the CLCPA goals, including the 2019 CARIS Study and a report prepared on behalf of the NYISO by the Analysis Group entitled "Climate Change Impact Phase II: An Assessment of Climate Change Impacts on Power System Reliability in New York State," dated September 2020.[18]

Based on these studies, the NYISO identified three broad transmission needs. First, the NYISO states that, even assuming completion of the transmission projects selected to address the Public Policy Transmission Needs identified by the

[18] The NYISO attached the two reports to its comments, which can be found along with all other filings made in this case at: http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=20-E-0497&CaseSearch=Search.

Commission for congestion relief over the UPNY/SENY and Central East interfaces and in Western New York, there is still a need for additional transmission capability throughout upstate New York to deliver energy from renewable resources to downstate load centers. The NYISO detailed the main findings of the 2019 CARIS Study, including that there are currently, or will be, a number of transmission-constrained "renewable generation pockets" around the State that would make it more difficult to meet the 70 by 30 mandate absent construction of new bulk transmission projects. Second, the NYISO notes the need for strengthening LIPA's 138 kV transmission backbone and transmission ties to New York City in order deliver up to 3,000 MW of offshore wind connected into the Long Island system to New York customers. Third, the NYISO acknowledged the proposals submitted by parties identifying transmission needs related to strengthening the existing New York City onshore "dry" transmission system, and the need for a new undersea "wet" transmission system to serve as the link between offshore wind farms and the bulk transmission system.

Other Comments

The remaining comments were filed by five parties that provided responses to the NYISO's 2020 solicitation – NYC,[19] Con Edison, Transco, Avangrid, and Transource. The parties mostly reiterate their proposals filed in response to the NYISO solicitation. For example, NYC strongly encouraged the Commission to declare that there are Public Policy Transmission Needs related to connecting New York City/Zone J with large sources of flexible, dispatchable, clean resources – such as

[19] To be clear, the New York City Mayor's Office of Sustainability responded to the NYISO's 2020 solicitation, while New York City provided comments.

hydropower from Canada, and to move forward with substantial commitments to strengthening transmission connections between Zone J and Long Island/Zone K to facilitate the delivery of energy from offshore wind. NYC also calls for the Commission to address constraints across the Central East and Total East transmission interfaces, which it asserts are preventing energy from upstate renewable resources from reaching downstate load centers.

For its part, Transource focuses its comments on the aggressive goals underlying the CLCPA and the improvements to New York's transmission infrastructure it asserts are needed in the near term to accommodate such goals. Transco highlights the several studies, including the 2019 CARIS Study, that it states identify system deficiencies extending to rural areas of Upstate New York and identifies existing and potential future curtailment issues associated with renewable generation. Avangrid reiterates its support for a finding of transmission needs based on the 9,000 MW offshore wind target under the CLCPA.

DISCUSSION

The Commission's role in the NYISO's Public Policy Transmission Planning Process is to "issue a written statement that identifies the relevant Public Policy Requirements driving transmission needs and explains why it has identified the Public Policy Transmission Needs for which transmission solutions will be requested by the [NY]ISO."[20] The Commission's statement shall also "explain why transmission solutions to other suggested

[20] NYISO OATT, Attachment Y, §31.4.2.1.

transmission needs should not be requested."[21] Finally, as noted, the Commission's statement "may also provide additional criteria for the evaluation of transmission solutions and non-transmission projects, and the type of analyses that it will request from the [NY]ISO."[22] In accordance with the NYISO OATT, this Order addresses the proposed Public Policy Requirements submitted in the 2018 and 2020 NYISO Filings.

Finding of Public Policy Transmission Needs

We start by examining whether to identify the mandates specified under the CLCPA as Public Policy Requirements driving the need for additional transmission facilities. Several responses to the 2020 NYISO Filing, as well as LIPA's referral letter, each proposed that the Commission make such a finding. The CLCPA requires the Commission to meet two targets that we find pertinent here, namely: (1) programs to require the procurement by the state's load serving entities (LSEs) of at least 9,000 MW of offshore wind energy by 2035; and (2) a program to require that "a minimum of [70] percent of the state wide electric generation secured by jurisdictional [LSEs] to meet the electrical energy requirements of all end-use customers in New York state in [2030] shall be generated by renewable energy systems."[23]

We note that the Commission, through issuance of the 2020 CES Order, aligned the State's existing Clean Energy Standard with the 70 by 30 mandate by requiring NYSERDA to procure and contract for a sufficient quantity of renewable

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[21] Id.

[22] Id.

[23] PSL §§66-p(2) and (5) (enacted as part of §4 of the CLCPA).

energy credits (RECs).[24] With respect to the 9,000 MW offshore wind mandate, based on prior Commission orders, NYSERDA has already procured 4,316 MW of offshore wind RECs (ORECs).[25] The 2020 CES Order authorized NYSERDA to schedule solicitations that target between 750 MW to 1,000 MW of offshore wind capacity per year through 2027 to achieve the 9,000 MW target.[26] The Commission expects that much of this offshore wind capacity will be in operation by 2030, and contribute significantly to meeting the 70 by 30 mandate. This is on top of the 130 MW of the offshore wind capacity that LIPA procured in 2017 related to the South Fork Wind Farm,[27] which is expected to be in service within the next two to three years.

As noted by several of the responses to the 2020 NYISO Filing and the NYISO, these actions regarding the procurement of offshore wind illustrate an impending need for upgrades to onshore transmission facilities to assure that the offshore wind energy expected to be injected into New York City and Long Island can be distributed to the State at large. The NYISO solicitation process provides an existing opportunity to address the need for these improvements.

Under Attachment Y of the NYISO OATT, a Public Policy Requirement must be a "federal or New York State statute or regulation, including a [Commission] order adopting a rule or regulation subject to and in accordance with the State Administrative Procedure Act, any successor statute, or any duly

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[24] 2020 CES Order, pp. 26-28.

[25] See https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Focus-Areas/NY-Offshore-Wind-Projects.

[26] 2020 CES Order, pp. 45-46.

[27] See https://www.lipower.org/wp-content/uploads/2019/10/LIPA-First-Offshore-Wind-Farm-Doc-V19_102819-FINAL.pdf.

enacted law or regulation passed by a local governmental entity in New York State, that may relate to transmission planning on the" New York State bulk power system.[28] We find that the CLCPA – and specifically the 9,000 MW offshore wind and 70 by 30 mandates under the statute – squarely fits within the definition of a Public Policy Requirement as a duly authorized State statute passed by the legislature and enacted into law by the Governor.

As noted, several parties that participated in the 2020 NYISO solicitation process proposed onshore transmission needs that they believe would result from the 9,000 MW offshore wind mandate. For example, PSEG-LI identifies the transmission need that we address through this Order. NYC more generally proposed a transmission need along the Long Island-NYC interface to transmit to load the 9,000 MW or more of offshore wind capacity expected to come online over the next decade. The NYTOs recommend quick Commission action to authorize the development of transmission needed to integrate new offshore wind generation into New York City, Long Island, and to the rest of the State. Con Edison adds that Long Island lacks sufficient customer demand or transmission backbone to allow energy from offshore wind to flow through Zone J to the rest of the State.

Moreover, Section 7(2) of Accelerated Renewables Act, enacted as part of the 2020-21 State Budget, required Staff from the Department of Public Service and the New York State Energy Research and Development Authority (collectively, Staff), in consultation with other entities, to prepare a comprehensive "Power Grid Study" for the "purpose of identifying distribution upgrades, local transmission upgrades and bulk transmission

[28] NYISO OATT, Attachment Y, §31.1.1.

investments that are necessary or appropriate to facilitate the timely achievement of the CLCPA targets."[29] On January 19, 2021, Staff finalized an "Initial Report on the New York Power Grid Study," finding that under certain scenarios, adding a new 345 kV tie-line across the Long Island to New York City interface would result in several benefits, including (1) decreasing by 400 GWh the potential curtailment of offshore wind energy, (2) enabling potentially greater than 3,000 MW of offshore wind to connect in Zone K (i.e., Long Island), and (3) reducing congestion of imports to Long Island whenever offshore wind output is low.[30] Although it is currently subject to public comment, the Commission notes that the Power Grid Study also supports the need for the transmission enhancements identified in LIPA's letter.

Based on our review of the proposals made in response to the 2020 NYISO Solicitation, the public comments relating to the responses, and LIPA's referral letter, the Commission concludes that the CLCPA supports finding several Public Policy Transmission Needs. As LIPA note in its referral letter, "[a] common theme among these proposals [i]s the need to upgrade the Long Island transmission system to meet the [offshore wind] goal embodied in the CLCPA …."[31] LIPA also points to an offshore wind study considered as part of the broader Power Grid Study as further support for building new transmission on Long Island. As LIPA notes, the Offshore Wind Study concluded that

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[29] L. 2020, ch. 58, Part JJJ, §7.

[30] See Case 20-E-0197, Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act, Initial Report on the New York Power Grid Study (filed January 19, 2021), p. 71.

[31] Letter from LIPA, dated Feb. 3, 2021, p. 1.

"additional transmission from Long Island (NYISO Zone K) to the mainland (Zones I and J) will be needed by 2035 to enable the interconnection of at least 3,000 MW (of the 9,000 MW total) of OSW [i.e., offshore wind] to LIPA's system. Notably, this identified need is independent of the specific locations where future OSW projects may be connected to the system."[32]

LIPA concluded that, based on its review of the studies, as well as the responses to the 2020 NYISO Solicitation, there are needs to: (1) increase the export capability of the LIPA-Con Edison interface, which connects Zone K to Zones I and J; and (2) upgrade the existing 138 kV transmission "backbone" between the Ruland Road and East Garden City substations to 345 kV to enable full deliverability of the offshore wind unforced capacity across LIPA's system.

Based on LIPA's referral letter, the studies outlined in the letter, the several proposals recommending the identification of a transmission need along the Long Island-New York City interface, and the NYISO's similar recommendation made in its comments, we find the CLCPA constitutes a Public Policy Requirement driving the need for:

1) Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the State; and

2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.

Accordingly, the Commission refers this need to the NYISO to consider solutions for increasing transmission capability from

[32] Id. at 2.

Long Island into Southeastern New York, consistent with the findings herein. However, the Commission declines to adopt the specific local transmission upgrades proposed by LIPA as part of this referral. While needed upgrades to the existing 138 kV transmission "backbone" between the Ruland Road and East Garden City substations may ultimately be identified by the NYISO after a full analysis is completed, it is premature to conclude what local upgrades may be most efficient or cost effective.

In accordance with the NYISO OATT, we also prescribe criteria to assist that NYISO in its solicitation and evaluation of proposed solutions to the identified Public Policy Transmission Needs. The NYISO's analysis should ensure no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions. The analysis should also ensure the system would be maintained in a reliable manner. The NYISO shall also consider other metrics in its evaluation of this Public Policy Requirement, including: changes in production costs; Load-Based Marginal Prices; transmission losses; emissions; Installed Capacity costs; Transmission Congestion Contract revenues; transmission congestion; impacts on transfer limits; and, resource deliverability.

In order to establish an appropriate cost allocation methodology that is reflective of the Commission's public policy objectives, the NYISO should apply the "beneficiaries pay principle," and take into account the economic benefits associated with congestion relief and assign a 75% portion of

the project(s) costs to the beneficiaries.[33] However, the remaining portion of the costs should be allocated on a load-ratio share statewide given that increased access to renewables will reduce emissions and thus provide benefits statewide, consistent with the CLCPA's objectives.

We note that the NYISO's Public Policy Transmission Planning Process does not supplant the need for developers to obtain any necessary permits and approvals, such as siting approvals under PSL Article VII. However, developers do not need to await the outcome of the NYISO's process to start seeking such approvals. In order to ensure any necessary facility improvements are expedited, the Commission encourages initiation of the effort required for the submission of siting applications under PSL Article VII as soon as practicable. Moreover, applicants are encouraged to use existing rights-of-way if possible. Projects that can fall within existing rights-of-way may be able to qualify for the Commission's expedited Article VII process.[34]

Other Requested Public Policy Transmission Needs

The NYISO's 2018 and 2020 solicitations resulted in a range of proposed Public Policy Requirements in addition to the CLCPA, including the Accelerated Renewables Act, the Commission's CES Order, the NYSDEC's Peaker Rule, and the City of New York's Climate Mobilization Act and Local Law 97. In many ways, these other proposed Public Policy Requirements also

[33] Pursuant to Attachment Y, §31.5.2 of the OATT, the NYISO "shall allocate the cost of transmission facilities to those within the transmission planning region that benefit from those facilities in a manner that is at least roughly commensurate with estimated benefits."

[34] See PSL 123(3)(b) (enacted pursuant to L. 2020, ch. 58, Part JJJ, §9).

drive the transmission needs identified herein and thus identifying them as the basis for such needs is redundant and unnecessary. Moreover, the CLCPA establishes the broadest framework of Statewide clean energy requirements compared to other statutes and regulations noted in responses to the NYISO solicitation. For these reasons, we defer to the mandates established pursuant to the CLCPA in establishing the requisite basis for the transmission needs identified herein.

At this time, the Commission finds that further consideration of the Power Grid Study is necessary before identifying additional transmission needs, and therefore declines to take any action with respect to other proposed Public Policy Requirements identified in the 2018 and 2020 NYISO Filings. We note, however, that the Commission reserves the right to identify additional transmission needs in the future, which may be informed by the Commission's final action on the Power Grid Study that recommends several actions related to the local and bulk transmission systems.

CONCLUSION

As discussed herein, the Commission has identified certain aspects of the CLCPA as a Public Policy Requirement driving the need for additional transmission facilities related to the delivery of offshore wind facilities. In so doing, the Commission has complied with the requirements of the NYISO's Public Policy Transmission Planning Process, and accordingly refers the Public Policy Transmission Need to the NYISO to solicit and evaluate potential solutions and to ultimately select the more cost effective or efficient solution(s). No other transmission needs are referred to the NYISO at this time.

The Commission orders:

1. The Climate Leadership and Community Protection Act constitutes a Public Policy Requirement driving the need for additional transmission facilities to deliver the output of offshore wind generating resources and shall be referred to the New York Independent System Operator, Inc. to consider solutions to that need, as discussed in the body of this Order.

2. The New York Independent System Operator, Inc. shall evaluate the Public Policy Requirement identified in Ordering Clause No. 1 utilizing the evaluation criteria discussed in the body of this Order.

3. The New York Independent System Operator, Inc. shall utilize the cost allocation methodology discussed in the body of this Order.

4. These proceedings are closed.

By the Commission,

(SIGNED) MICHELLE L. PHILLIPS
Secretary

The 2018 Public Policy Transmission Planning Cycle

Fifteen entities provided responses to the NYISO's Solicitation, issued on August 1, 2018. Each of the responses and public comments to the responses are summarized next.

Summary of Responses to the NYISO's 2018 Solicitation

New York City

New York City proposes two public policies that it believes are driving the need for transmission into Zone J: (1) the Clean Energy Standard (CES) adopted by the Commission on August 1, 2016, to achieve the goal that 50 percent of New York's electricity is to be generated by renewable sources by 2030 (i.e., 50 by 30);[1] and (2) the adoption by the New York State Department of Environmental Conservation (NYSDEC) of State Implementation Plans related to compliance with National Ambient Air Quality Standards for, among other pollutants, ozone, particulate matter, sulfur dioxide, and nitrogen oxides (NOx). As for specific transmission needs, New York City points to a NYISO study presented in July 27, 2018 (2018 Transmission Constraints Study) and entitled "Public Policy Transmission Needs Study: Transmission Constrained Renewable Generation," which study New York City asserts demonstrates that implementation of the CES will result in widespread transmission needs across New York. [2] Based in part on results from the 2018 Transmission Constraints Study, New York City proposes a "holistic examination of the entire transmission system" with the goal of "improv[ing] the

[1] Case 15-E-0302, et al., Large-Scale Renewable Program and a Clean Energy Standard, Order Adopting a Clean Energy Standard (issued August 1, 2016) (CES Order).

[2] The NYISO Constraints Study can be found at: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_espwg/meeting_materials/2018-07-27/PPTN_genpockets_ESPWG_20180727.pdf.

flow of renewable energy from upstate to downstate" and ensuring the integration of "onshore transmission needed to allow at least 2,400 MW of offshore wind to interconnect into downstate load centers."[3]

New York Power Authority (NYPA)

NYPA also cites to the CES as a public policy driving transmission needs, as well as the City of New York's goal to achieve an 80% reduction in greenhouse gases by 2050 (80 by 50 goal), implementation by the NYSDEC of the Regional Greenhouse Gas Initiative (RGGI), and NYSDEC's then-draft regulations requiring a reduction in NOx emissions from peaking electric generators. NYPA notes that "[t]he most immediate Transmission Need is in northern New York ('Northern Transmission Need')" where it asserts "nearly 1,600 MW of local renewable generation, along with additional imports of Canadian hydropower, is bottled in NYISO Zone D and is frequently subject to negative pricing during periods of transmission congestion."[4] NYPA states that, to effectively leverage the use of "existing hydroelectric power in conjunction with incremental non-hydro renewable resources to meet these targets, new transmission connecting these resources (particularly those in northern New York) to load centers will be required."[5] In this respect, NYPA notes that the 2018 Transmission Constraints Study "confirmed the Northern

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[3] New York City Letter, pp. 7-8. New York City also proposes a transmission need based on constraints consisting of voltage limitations at the Central East and Total East interfaces. Id., pp. 4-6.

[4] NYPA Letter, p. 2. NYPA also notes that the 2018 Transmission Constraints Study supports transmission needs in Southern Tier, Western and Capital regions of New York, as well as to tie in offshore wind. Id., pp. 11-13.

[5] Id., p. 4.

Transmission Need, finding that in both the Summer peak and Summer light load scenarios with baseline renewable additions transmission overloads occurred on the 230 kV system in zone D and in some cases zone E."[6]

New York Transco LLC (Transco)

Transco cites to the CES coupled with the 2018 Transmission Constraints Study as the basis for two transmission needs driven by public policy requirements:

- Northern NY Overloads ("Pocket X" in 2018 Transmission Constraints Study), including along the Zone D wind generation corridor (230 & 115 kV), North to South Moses South transfer path (230 and 115 kV), and Jefferson and Lewis Counties (115 kV);

- The Southern Tier ("Pocket Z" in 2018 Transmission Constraints Study), including the Finger Lakes Region Wind and Solar (115 kV) and Southern Tier Transmission Corridor (345 and 115 kV).

Transco asserts that addressing these transmission needs would unbottle collectively 1,200 MW of renewable generation from these two New York regions.

Indicated NYTOs

Indicated NYTOs[7] identify the CES as a public policy driving transmission needs, as well as the City of New York's energy objectives established as of 2018 that called for an 80% reduction in the City's greenhouse gas emissions by 2050 and a 40% reduction in such emissions from the City government by 2030. Indicated NYTOs otherwise rely on the 2018 Transmission Constraints Study to support its proposal for transmission needs to alleviate the Northern New York overloads and the overloads

[6] Id., p. 8.

[7] The Indicated NYTOs include Central Hudson, Con Ed, National Grid, NYPA, NYSEG, O&R, and RG&E.

on the 345 kV and 115 kV systems in the Southern Tier Corridor and on the 115 kV system in the Finger Lakes region. Indicated NYTOs also call for a transmission solution to meet the State's goal of injecting 2,400 MW of offshore wind into downstate New York as specified in the 2018 OSW Order.[8]

PSEG-Long Island, LLC (PSEG_LI)

Like other parties, PSEG-LI also identified the 2018 OSW Standard as a Public Policy Requirement driving Transmission Needs related to the goal in that Order to make operational by 2030 at least 2.4 GW of offshore wind capacity. PSEG-LI asserted that the offshore wind procurements that would result from the Order "will drive the need to construct transmission facilities in Zones J and K; in particular, "OSW will drive the need for construction of 'Transmission Backbone' facilities; i.e., facilities that are likely to be required to deliver OSW from interconnection points to major 345 kV hubs on Long Island and in New York City, over a broad range of possible project configurations and interconnection points."

NextEra Energy Transmission New York (NextEra)

NextEra relies on the CES as a public policy that drives several transmission needs, which NextEra asserts are supported by the 2018 Transmission Constraints Study, as well as its own studies of the powerflow impacts and the wholesale market impacts that new CES-driven renewable resources would have on the bulk transmission grid. Based on the results of these studies, NextEra proposes five separate transmission needs:

- Dysinger East Corridor: Transmission is needed to increase the Dysinger East interface by 900 MW to offset

[8] Case 18-E-007, In the Matter of Offshore Wind Energy, Order Establishing Offshore Wind Standard and Framework For Phase 1 Procurement (issued July 12, 2018).

the decrease in interface limits resulting from the interconnection of new renewable resources.

- West Central New York Corridor: New transmission is needed to increase the West Central interface by 900 MW to offset the decrease in interface limits resulting from the interconnection of new renewable resources.

- Northern New York Corridor: New transmission is needed to increase the Moses South interface by 900 MW to offset the decrease in interface limits resulting from the interconnection of new renewable resources.

- Central East Corridor: New transmission is needed to increase the Total East and Central East interface limits by at least 3000 MW to adequately address Demand Congestion.

- Southern New York Corridor: New transmission is needed to increase the UPNY-SENY and Dunwoodie South interfaces by 500 MW to offset the decrease in interface limits due to the interconnection of new renewable resources upstate. In addition to restoring the interface to its original limits, an incremental 1000 MW of transfer capability above the original limits across the UPNY-SENY, UPNY-CONED, and Dunwoodie South interfaces is necessary to adequately address Demand Congestion.

Although concluding that all five transmission needs should be addressed, NextEra states that Northern New York Corridor and the Central East Corridor need should be addressed first due to the amount of congestion and reliability issues anticipated along those corridors.

Anbaric and LS Power Grid New York, LLC (LS)

Anbaric and LS also point to the OSW Standard as a public policy driving transmission needs.[9] These parties note

[9] The Long Island Power Authority also filed comments by cover letter, requesting that the comments be maintained as confidential pursuant to Public Officers Law §§87(2)(d) and 89(5)(a)(1).

that transmission facilities are likely to be required to deliver offshore wind from interconnection points to major 345 kV hubs on Long Island and in New York City, over a broad range of possible transmission configurations. For its part, Anbaric notes that addressing transmission needs in these corridors will unbottle offshore wind capacity of up to 2,400 MW by 2030 and it may be appropriate to size the additional transmission capacity to allow for 4,800 MW in anticipation of future procurements.[10]

H.Q. Energy Services (U.S.) Inc. (HQUS)

HQUS – like other parties – points to the CES as the basis for a transmission need related to reliably delivering renewable energy in Northern New York to downstate load centers. HQUS notes that "[p]ersistent transmission congestion on the New York grid prevents [] upstate resources from being reliably delivered to downstate customers, and in some circumstances, even leads to curtailment of clean resources as wind and hydro generation compete against one another to serve declining load and access limited transmission capability."[11] It suggests that "[b]uilding out the transmission infrastructure in Northern New York, especially on the Moses South corridor, presents an obvious opportunity for New York to develop a coordinated transmission development strategy that maximizes overall customer value." HQUS asserts that the optimum approach is to identify a Public Policy Transmission Need (PPTN) that allows

[10] Anbaric also proposed a number of local transmissions solutions based on the results of the 2018 Transmission Constraints Study. Like several other parties, LS Power points to the CES as the basis for identifying transmission solutions based on the findings of the 2018 Transmission Constraints Study, including transmission upgrades in Northern New York, and in the Western and Southern Tiers.

[11] HQUS Letter, p. 2.

the NYISO "to broadly solicit transmission solutions" that access large volumes of clean and renewable energy supply.[12]

Other Parties

Finally, Invenergy LLC, ITC New York Development, LLC, Avangrid Networks, Inc., LS Power Grid New York, LLC, PowerBridge LLC, Transource New York, LLC., and PPL Translink generally identified one or more of the CES, the Orders issued in the Reforming the Energy Vision (REV) proceeding,[13] and the Order granting the Clean Energy Fund (CEF),[14] as public policies driving transmission needs. Invenergy, ITC and Avangrid also asserted support for the transmission needs identified pursuant to the 2018 Transmission Constraints Study. For its part, PowerBridge urges consideration of High Voltage Direct Current (HVDC) transmission as a solution on the grounds that it may offer important ancillary benefits to the grid, including controllability, voltage support, and black start capability.

Summary of Public Comments

New York Independent System Operator (NYISO)

In its comments, the NYISO explains that its 2018 Transmission Constraints Study supports the need for additional transmission capability due to curtailment of existing and future renewable resources. As noted by the NYISO, the study performed a screening assessment of transmission constraints on the bulk transmission system under summer peak and light load conditions, including consideration of local transmission system contingency events in the service territories of National Grid,

[12] Id., p. 5.

[13] See generally, Case 14-M-0101, Reforming the Energy Vision.

[14] Case 14-M-0094 et al., "Order Authorizing Clean Energy Fund Framework," dated January 21, 2016.

NYSEG and Central Hudson. Each case was evaluated with a mix of existing, planned, and additional renewable generation to achieve the CES. Based on these and other assumptions, the NYISO identified generation pockets in which transmission lines may overload as a result of the modeled renewable resource injections, as well as the levels of curtailments of renewable generation that would be required to mitigate these overloads. The resulting constraints were geographically grouped into four pockets to identify the transmission constrained renewable generation.

Based on the study assumptions, the NYISO asserts that to unbottle the existing and projected renewable generation, increased transmission capability would be needed in the following estimated amounts: (1) 25–125 MW in Pocket "W" on the Western New York 115 kV system; (2) 975–1,050 MW for Pocket "X" on the Northern New York 230 kV and 115 kV systems; (3) 400–500 MW in Pocket "Y" on Eastern New York 115 kV systems; and (4) 875–925 MW in Pocket "Z" on the Southern Tier 345 kV and 115 kV systems. The NYISO asserts that increased transmission capability at the bulk power transmission facility level could help to address or alleviate the potential constraints in these pockets.

The NYISO also cites its 2017 Congestion Assessment and Resource Integration Studies (CARIS), released in April 2018, as supporting the need for additional transmission capability due to the projected curtailment of existing and future renewable resources. The CARIS study assessed projected congestion patterns in the New York Control Area (NYCA) related to achieving the CES. Several scenarios were modeled, including the System Resource Shift (SRS) Case. Study results from the SRS Case identified two specific indicators that insufficient

transmission could restrict a large-scale buildup of renewable generation in New York State: (1) the study reported high levels of demand congestion across the NYCA; and (2) the study observed a pattern of congestion when analyzing the curtailment of approximately one TWh per year of solar and wind generation due to transmission constraints.

The NYISO concluded that, consistent with the structure of the NYISO's Public Policy Process, the Commission should determine the need for transmission at a higher level and allow developers to propose their own projects to fulfill the need for transmission. The NYISO asserts that this approach would allow the greatest potential for creative and innovative solutions to satisfy the identified need, for the NYISO's selection of the more efficient or cost-effective Public Policy Transmission Project eligible for regional cost allocation and cost recovery.

The NYISO's Market Monitoring Unit (MMU)

The MMU recommends in its comments that the Commission focus any order regarding a PPTN on the underlying public policy objective and avoid identifying the specific facilities or paths to be upgraded. The MMU asserts that the PPTNs identified in the last two NYISO solicitation cycles were very prescriptive about the specific transmission solutions that the NYISO should solicit and resulted in little variation across the proposed solutions. The MMU asserts that such an approach would limit the creativity of developers and likely foreclose opportunities for the most efficient and beneficial proposals to come forward in the Public Policy Transmission Planning process. Hence, the MMU notes its preference for the Commission to specify a set of generic criteria that would characterize a public policy objective and allow competition from projects across corridors.

Independent Power Producers of New York (IPPNY)

IPPNY focuses its comments on the aspects of HQUS's response to the 2018 NYISO Solicitation that IPPNY interprets as recommending that the Commission make changes to the resource eligibility requirements under the CES Standard, presumably to include large scale storage impoundment hydroelectric plants owned by Hydro Quebec. IPPNY asserts that HQUS's proposal, among other things, is far outside the scope of the Commission's implementation of the Public Policy Transmission Planning Process and that, even if considered, should be rejected.

, and three parties that filed proposals pursuant to the 2018 NYISO Solicitation – New York City, NextEra and Transource.[15] The comments received in response to the notice are summarized and discussed below.

oneGRID Corporation (oneGRID)

oneGRID submits comments to voice its specific support for two proposed needs proposed through the 2018 NYISO Solicitation process:

- Upgrading the upstate local transmission system to allow the interconnection of new renewable generation; and

- Upgrading the backbone transmission system to allow delivery of clean energy from upstate regions to load centers in the Lower Hudson Valley, New York City, and Long Island areas.

[15] The Utility Intervention Unit and a group of non-governmental entities identified as "Clean Energy Parties" filed comments after the expiration of the 60-day public comment period allowed under the State Administrative Procedure Act. For this reason, these comments are not being considered here.

oneGrid asserts, among other things, that the Commission should also direct the NYISO to apply evaluation criteria that favors transmission that results in guaranteed deliverability of upstate renewable resources directly into New York City and reduces the reliance on in-City thermal generation. generation.

New York City

New York City stressed the lack of bulk transmission infrastructure to deliver renewable energy to downstate load pockets. To emphasize this point, New York City cites the NYISO's 2018 Power Trends report, which shows that 64.8% of the upstate summer installed capacity, and 91.1% of upstate energy production in 2017, is from carbon-free resources, while only 15.5% of the downstate summer installed capacity, and only 30% of downstate energy production in 2017, is from carbon-free resources. NEW YORK CITY notes that with the exception offshore wind, construction of large-scale renewables in and near the City is not practical, and offshore wind alone is insufficient to meet carbon reduction goals established by both the State and New York City.

Outside of reiterating specific public policies driving transmission needs, New York City also summarized an assessment regarding changes it asserts are needed to the Bulk Power System to increase downstate access to upstate renewable resources. New York City noted that its analysis revealed that, while the AC Transmission project would address some of the thermal constraints that now exist, underlying voltage constraints would then become the limiting set of constraints. Specifically, New York City explained that inadequate reactive resources result in voltage limitations that will limit power flows across the Central East and Total East interfaces and,

because many renewable resources are located to the north and west of these interfaces, system voltage constraints would limit the ability of downstate areas from accessing the power generated at the facilities. New York City concluded that, without sufficient new transmission capacity, the full production potential from clean energy resources located in upstate New York may not be realized.

NextEra

NextEra summarizes the independent analysis of transmission constraints it undertook as part of its response to the 2018 NYISO Solicitation and reiterates its identification of transmission needs in several corridors. NextEra also calls on the Commission to create a process to allow all potential transmission developers to be provided access with system information in the event it determines that the NYISO should consider additional evaluation criteria in its evaluation process. Finally, NextEra expressed its support for the Commission including the NYISO's new cost containment procedures in the evaluation process of any Public Policy Transmission Need on the grounds that it would provide significant benefits to New York, and aid in the selection of the most cost effective and efficient transmission solution.

Transource

Transource also reiterated the position it took in response to the 2018 NYISO Solicitation, noting in particular that all fifteen responsive parties proposed that the Commission's CES be designated a Public Policy Requirement. Transource also pointed to the NYISO's interconnection queue, noting that a large number of proposed renewable energy projects are being proposed to be located in remote areas of New York far from the customers that must be served and energy from those

resource would not be able to be delivered to downstate load pockets absent transmission upgrades aimed at addressing existing constraints.

Transource recommends that the Commission adopt selection criteria as part of this order that would incentivize the use of advanced transmission technology such as BOLD®, which Transource asserts would limit energy losses and increase system efficiency. Transource proposes to include the following criteria to meet these goals:

- Substantially reducing electromagnetic field impacts;
- Avoiding costly series compensation equipment;
- Substantially reducing the turn-around time needed in the future for placing new and replacement circuits into service;
- Significantly streamlining siting and construction activities;
- Substantially reducing visual impacts by utilizing significantly shorter towers; and
- Significantly ameliorating environmental impacts by providing avian-friendly transmission lines and structures.

Transource also recommended that the Commission include selection criteria related to the nature and scope of the transmission upgrades that must be completed to deliver renewable energy to load.

Exhibit No. TRANSCO-102

New York ISO
Independent System Operator

LONG ISLAND OFFSHORE WIND EXPORT PUBLIC POLICY TRANSMISSION NEED PROJECT SOLICITATION

Response due October 11, 2021

August 12, 2021

Dear NYISO Stakeholder or Interested Party:

With this letter, the NYISO solicits Public Policy Transmission Projects[1] and Other Public Policy Projects to address the Long Island Offshore Wind Export Public Policy Transmission Need for evaluation in the NYISO's Public Policy Transmission Planning Process.

I. Long Island Offshore Wind Export Public Policy Transmission Need

On August 3, 2020, the NYISO issued a letter inviting stakeholders and interested parties to submit proposed transmission needs driven by Public Policy Requirements to the NYISO on or before October 2, 2020.[2] On October 9, 2020, the NYISO filed at the New York State Public Service Commission ("PSC" or "Commission") proposals for transmission needs driven by Public Policy Requirements submitted by 15 entities.[3] On that date, the NYISO also submitted to the Long Island Power Authority 10 proposals for transmission needs that, as proposed, would require a physical modification to transmission facilities in the Long Island Transmission District. Previously, on July 30, 2020, the Long Island Power Authority referred to the PSC a Public Policy Transmission Need for the delivery of offshore wind output on Long Island and from Long Island into New York City.[4] On November 18, 2020, the PSC published the proposed needs in the State Register for comments in accordance with the State Administrative Procedure Act.[5]

Following the public comment period, the PSC issued an order on March 19, 2021 stating that:

> Based on LIPA's referral letter, the studies outlined in the letter, the several proposals recommending the identification of a

[1] Capitalized terms in this letter refer to defined terms in the NYISO's Open Access Transmission Tariff ("OATT") or the NYISO Public Policy Transmission Planning Manual.

[2] The requirements for the Public Policy Transmission Planning Process are set forth in Attachment Y of the OATT and the NYISO Public Policy Transmission Planning Process Manual.

[3] The NYISO posted these submittals on its Planning Studies website under "Proposed Needs" contained within the "Public Policy Documents" folder on the NYISO's Planning Studies website, which can be accessed at: https://www.nyiso.com/cspp.

[4] Case No. 8-E-0623, *In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2018, Letter of Rick Shansky to Chair John Rhodes* (July 30, 2020).

[5] Case No. 20-E-0497, *In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2020*, Notice of Proposed Rulemaking, New York State Register I.D. No. PSC-46-20-00009-P (November 18, 2020), at 17.

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> transmission need along the Long Island-New York City interface, and the NYISO's similar recommendation made in its comments, we find the CLCPA constitutes a Public Policy Requirement driving the need for:
>
> 1) Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the State; and
>
> 2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.[6]

The Commission referred the Public Policy Transmission Need to the NYISO to consider solutions for increasing transmission capability from Long Island into Southeastern New York.[7]

The order further stated:

> In accordance with the NYISO OATT, we also prescribe criteria to assist that NYISO in its solicitation and evaluation of proposed solutions to the identified Public Policy Transmission Needs. The NYISO's analysis should ensure no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions. The analysis should also ensure the system would be maintained in a reliable manner.[8]

II. Stakeholder Discussions and Technical Conference

The NYISO made presentations at combined meetings of the Transmission Planning Advisory Subcommittee (TPAS) and the Electric System Planning Working Group (ESPWG)[9] to review the PSC's determination of the Public Policy Requirement and the nature of the resulting Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN).[10] The NYISO held a technical conference on July 8, 2021 with Developers and interested parties to obtain their input on the NYISO's application of the selection metrics set forth in Section 31.4.8.1 of the OATT for purposes of soliciting solutions to the Public Policy Transmission Need.[11] Developers

[6] Case No. 20-E-0497 and Case No. 18-E-0623, *Order Addressing Public Policy Requirements for Transmission Planning Purposes* (March 19, 2021), at 23, *available at* https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={8C8F3D7A-4FEB-4B18-88F5-82CF587895C9}.

[7] *Id.* at 23-24.

[8] *Id.*

[9] The meetings were held on March 23, 2021, March 26, 2021, April 7, 2021, April 23, 2021, May 3, 2021, May 20, 2021, June 1, 2021, June 22, 2021, July 1, 2021, July 23, 2021, and August 2, 2021.

[10] The NYISO's presentations are posted on its website under meeting materials at the following link: https://www.nyiso.com/espwg.

[11] OATT § 31.4.4.3.1; Public Policy Transmission Planning Process Manual ("PPP Manual") § 3.2.

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are reminded that, in addition to the metrics listed in Section 31.4.8.1.10, "[t]he ISO, in consultation with stakeholders, shall, as appropriate, consider other metrics in the context of the Public Policy Requirement, such as: change in production costs; LBMP; losses; emissions; ICAP; TCC; congestion; impact on transfer limits; and deliverability."[12] On August 11, 2021, the NYISO posted a "Frequently Asked Questions" document to respond to stakeholders' questions.[13]

The NYISO has established sufficiency criteria in accordance with the criteria set forth in the PSC Order, and has developed baseline models and associated power flow results to aid interested parties in developing project proposals. The attached "Study Cases and Sufficiency Criteria" document provides the details of the system models and criteria that the NYISO will apply to determine the sufficiency of each proposed Public Policy Transmission Project and Other Public Policy Project to satisfy the LI PPTN. Further discussion with stakeholders regarding the LI PPTN assessment will be held at ESPWG and TPAS.

III. Project Submission Requirements

Pursuant to Section 31.4.3 of Attachment Y to the OATT, the NYISO hereby solicits Public Policy Transmission Projects and Other Public Policy Projects (including, but not limited to, generation and demand-side resources) to address the LI PPTN. Developers, including Transmission Owners and Other Developers, must provide project information in accordance with Section 31.4.5 of the OATT and Section 3.3 of the Public Policy Transmission Planning Manual ("PPP Manual").[14] This project information will be used by the NYISO to analyze proposed Public Policy Transmission Projects and Other Public Policy Projects in accordance with the criteria set forth in the NYISO's tariff and the sufficiency criteria set forth in the attached "Sufficiency Criteria and Additional Information" document. Specifically, a Developer proposing a Public Policy Transmission Project or an Other Public Policy Project must submit the project information required in Attachment B of the Manual for the NYISO to analyze the project's viability and sufficiency.[15] A Developer proposing a Public Policy Transmission Project must also submit the project information required in Attachment C of the PPP Manual for the NYISO's project evaluation and selection,[16] as well as the additional information required by the NYPSC Order as described in the attached "Sufficiency Criteria and Additional Information" document.

[12] OATT § 31.4.8.1.10.

[13] The FAQ document is available at the following link: https://www.nyiso.com/documents/20142/22968753/LIPPTN-FAQ-08112021.pdf/9ea835b4-4343-be80-cdc2-c932a067e5cd

[14] The NYISO Public Policy Transmission Planning Process Manual is posted at: https://www.nyiso.com/documents/20142/2924447/M-36_Public%20Policy%20Manual_v1_0_Final.pdf/e8851b0f-8ca4-779f-97a0-d75af6716d94.

[15] Attachment B to the PPP Manual entitled "Information for a Proposed Solution to a Public Policy Transmission Need" is posted at: https://www.nyiso.com/manuals-tech-bulletins-user-guide.

[16] Attachment C to the PPP Manual entitled "Data Submission for Public Policy Projects" is posted at: https://www.nyiso.com/manuals-tech-bulletins-user-guides. Please note that Attachment C was recently updated on August 6, 2021.

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A Developer may voluntarily submit with its project information a Cost Cap for its proposed Public Policy Transmission Project that covers its Included Capital Costs, as defined in Section 31.4.5.1.8.1 of the OATT, but not its Excluded Capital Costs, as defined in Section 31.4.5.1.8.2.[17] Such Cost Cap for a proposed Public Policy Transmission Project may be in the form of a hard Cost Cap or a soft Cost Cap as described in Sections 31.4.5.1.8.3 and 31.4.5.1.8.4 of the OATT. The NYISO's consideration of any Cost Cap submitted by a Developer will be based on the quantitative and qualitative considerations in Sections 31.4.8.1 and 31.4.8.2 of the OATT. The NYISO's consideration of Excluded Capital Costs and/or costs of a proposal that does not contain a voluntary Cost Cap in its evaluation and selection will rely on the cost estimates determined by its independent consultant.

The Developer of a Public Policy Transmission Project must also demonstrate to the NYISO, simultaneous with its submission of its application, that it has submitted a new or revised Transmission Interconnection Application or Interconnection Request, as applicable.[18] The project information submitted by the Developer for its Public Policy Transmission Project must be the same as the Developer's proposed projects in its Transmission Interconnection Application.[19] If a Developer includes a facility with its proposed Public Policy Transmission Project that is a potential Network Upgrade Facility (NUF) required for the reliable interconnection of the project, the Developer should also clearly identify it as a potential NUF in the associated Transmission Interconnection Application. Additional information on the coordination of the Public Policy Transmission Planning Process and the NYISO's interconnection processes is contained in Section 3.4.4 and Attachment C of the PPP Manual.

A Developer must submit its application to the NYISO in the manner described below by 11:59 pm EST on October 11, 2021 in order to be considered in the NYISO's Public Policy Transmission Planning Process for the LI PPTN. A Developer of a Public Policy Transmission Project must also include with its application, also by 11:59 pm EST on October 11, 2021:[20] (i) an executed study agreement, which is contained in Appendix I of Section 31.12 of the OATT and provided as a fillable form as Attachment II to this letter,[21] (ii) a non-refundable application fee of $10,000, and (iii) a study deposit of $100,000.[22] Please contact NYISO Accounts Receivable (NYISOFinancePlanningStudies@nyiso.com) regarding submission of the application fee and study deposit.

A Developer must submit a separate application for each Public Policy Transmission Project. The only permitted alternatives within a proposed Public Policy Transmission Project are routing alternatives as provided in Section 31.4.5.1.3 of the OATT. Any other alternative

[17] *See* OATT § 31.4.5.1.8.

[18] *Id.* at § 31.4.4.3.4. In most cases, Developers will need to submit a Transmission Interconnection Application for their proposed Public Policy Transmission Projects. However, a Developer could alternatively submit a Large Facility Interconnection Request for its proposed project, if eligible, to be studied under the Large Facility Interconnection Procedures (LFIP). References to the interconnection process in this letter are primarily focused on the Transmission Interconnection Procedures, and Developers that seek to have their proposed transmission projects studied under the LFIP should familiarize themselves with the difference in process and terminology.

[19] *Id.*

[20] These additional submission requirements do not apply to Other Public Policy Projects.

[21] OATT § 31.4.4.4; PPP Manual § 3.4.2.

[22] OATT § 31.4.4.4.

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must be submitted as a separate Public Policy Transmission Project.[23] Once a Developer submits a Public Policy Transmission Project to the NYISO for consideration, the design of the proposed facilities (*i.e.*, new transmission facilities or upgrades to existing transmission facilities proposed to satisfy the Public Policy Transmission Need) may not be modified. Facilities that the Developer identifies as potential NUFs required to reliably interconnect the project are subject to change and will be finalized by the NYISO through the Transmission Interconnection Procedures. If a Developer submits Confidential Information as part of its project information, the Developer shall submit redacted and unredacted versions of this project information pursuant to Section 31.4.15.4.[24]

Developers must send their applications for a Public Policy Transmission Project or Other Public Policy Project electronically to: publicpolicyplanningmailbox@nyiso.com, including in the subject line "LI PPTN Project Proposal." Additional details on submission of proposed Public Policy Transmission Projects and Other Public Policy Projects are contained in Section 3.4.2 and Section 3.4.3 of the PPP Manual, respectively. Due to file size restrictions, e-mail attachments should not exceed 60 MB for any single e-mail. Any supplemental hard copy information that could not be sent via e-mail should be sent to Ross Altman, Manager of Public Policy Transmission & Interregional Planning, at 10 Krey Boulevard, Rensselaer, New York 12144.

IV. Developer Qualification for Proposed Transmission Projects

A Developer proposing a Public Policy Transmission Project must be qualified to under the provisions of Attachment Y. A Developer that is not yet qualified to submit transmission projects, but intends to respond to this solicitation, must submit a Developer Qualification Form on or before September 11, 2021.[25] Please note that this date is before applications for proposed Public Policy Transmission Projects are due to the NYISO. A link to the form can be found in Attachment A to the PPP Manual and the form is contained in Attachment A of Reliability Planning Process Manual.[26] A Developer that has been qualified shall inform the NYISO within thirty days of any material change not previously reported to the information it provided regarding its qualifications and shall submit to the NYISO each year its most recent audited annual financial statement when available.[27] Additional details on the application of the qualification requirements to Developers of proposed transmission projects are contained in Attachment G of the Reliability Planning Process Manual.[28] All submissions of Developer Qualification Forms and updates must be submitted to DeveloperQualification@nyiso.com.

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[23] *Id.* at § 31.4.4.3.2.

[24] *See id.* at § 31.4.4.3.3.

[25] *Id.* at § 31.4.4.3.7; *see also id.* at §§ 31.4.4.1, 31.4.4.3.

[26] The Developer qualification form may be obtained at the following link: https://www.nyiso.com/documents/20142/2924881/M-26_RPP%20Manual_Att%20A_Final.pdf/bb765eaa-e1b9-a986-6728-3f169015b6bd.

[27] *See* OATT § 31.4.4.1.2.

[28] Attachment G of the Reliability Planning Process Manual is available at the following link: https://www.nyiso.com/documents/20142/2924881/M-26_RPP%20Manual_Att%20G_v2016-04-01_Final.pdf/a61f5b50-7ed7-c57d-7df6-f864e7cdc8f9.

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V. Additional Considerations for Upgrades to Existing Facilities and Anticipated Tariff Revisions

On August 18, 2020, the NYISO filed a petition for a declaratory ruling at FERC to confirm and clarify the scope of Transmission Owners' right to build, own, and recover the costs of upgrades to their existing transmission facilities.[29] On April 15, 2021, FERC issued a declaratory order finding that Transmission Owners have a right of first refusal for upgrades to their existing facilities, including upgrades to existing facilities that other Developers propose as part of proposed transmission projects that the NYISO selects in its regional transmission plan for purposes of cost allocation. However, the Commission denied the NYISO's request for clarification that if the Commission confirms that there is a right to build, own and recover the costs of upgrades, that the right could be implemented under existing provisions of the OATT. Accordingly, the NYISO, in consultation with stakeholders, has proposed and developed a tariff mechanism to effectuate the Transmission Owners' right to build, own, and recover the cost of upgrades in the Public Policy Process. The NYISO posted draft tariff provisions for consideration by the Business Issues Committee (BIC) at its August 11, 2021 meeting.[30] On August 11, 2021, the BIC voted in favor of the proposed tariff revisions, recommending that the Management Committee approve, and the NYISO Board of Directors authorize, the filing of the proposed tariff revisions pursuant to Section 205 of the Federal Power Act. Upon approval of the proposed tariff revisions by the Management Committee and the NYISO Board of Directors, the NYISO will file the proposed revisions with the FERC.

Developers should carefully review the declaratory order issued by the Commission and the related stakeholder materials concerning upgrades to existing Transmission Owner transmission facilities when proposing their Public Policy Transmission Projects in response to this solicitation. Developers should be aware of the right confirmed by the FERC in proposing their solutions by considering which facilities may be upgrades to existing transmission facilities. Additionally, Developers should also be mindful that the anticipated changes would (i) require the NYISO to use independent cost estimates in evaluating the cost of components that are determined to be upgrades and (ii) consider the capital costs of upgrades to be an Excluded Capital Cost and, therefore, not eligible to be covered by a Cost Cap. While Developers should submit their proposal based on the current Cost Cap provisions of the OATT, Developers will have an opportunity to amend any Cost Cap to align it with the revised provisions if the NYISO submits, and FERC accepts, the anticipated tariff changes.[31]

VI. Project Evaluation and Selection

The NYISO staff will evaluate the proposed Public Policy Transmission Projects using metrics as described in the NYISO's tariff, Sections 31.4.6 and 31.4.8.1 of the OATT, as well as the criteria prescribed by the PSC, in identifying the more efficient or cost effective solution to

[29] *See New York Indep. Sys. Operator, Inc.*, Petition for Declaratory Order, Docket No. EL20-65-000 (August 18, 2020), available at: https://nyisoviewer.etariff.biz/ViewerDocLibrary//Filing/Filing1650/Attachments/20200818-NYISOPttnDclrtryOrdr.pdf.

[30] The meeting materials and draft tariff provisions are available at the following link: https://www.nyiso.com/business-issues-committee-bic-?meetingDate=2021-08-11

[31] *See* OATT § 31.4.4.3.5 (providing for Developers to update their transmission project information).

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satisfy the LI PPTN. The process for the evaluation of proposed Public Policy Transmission Projects is detailed in Section 31.4.8 of the OATT and described in the NYISO Public Policy Transmission Planning Process Manual. The evaluation may also include scenarios that modify the assumptions to evaluate the proposed Public Policy Transmission Projects according to the selection metrics, the impact on the NYISO's wholesale electricity markets, and how each proposal could facilitate achievement of the Climate Leadership and Community Protection Act (CLCPA) Public Policy Requirement.

Questions about the process and filing of project information or about the Public Policy Transmission Planning Process should be addressed to: publicpolicyplanningmailbox@nyiso.com.

Very truly yours,

/s/ Zachary G. Smith

Zachary G. Smith
Vice President
System & Resource Planning

cc: Mr. Robert Rosenthal, General Counsel – State of New York Department of Public Service
Attachments

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Attachment I

Sufficiency Criteria and Additional Information

Long Island Offshore Wind Export Public Policy Transmission Need

Sufficiency Criteria and Additional Information

Sufficiency Criteria (Minimum Criteria)

In order to address the Long Island Offshore Wind Export Public Policy Transmission Need (LI PPTN) as identified by the NYPSC, a sufficient Public Policy Transmission Project or Other Public Policy Project shall meet, at a minimum, the following criteria:

- Ensure full output of at least 3,000 MW of offshore wind connected to Long Island (Zone K) while maintaining reliability under all lines-in-service (N-0 and N-1) and prior-outage (N-1-1) conditions per North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council (NPCC) and New York State Reliability Council (NYSRC) transmission security criteria, and local Transmission Owner planning criteria. A sufficient project must resolve constraints on Bulk Electric System facilities that are significantly impacted by Long Island offshore wind under summer peak and light load conditions.
- Add at least one bulk transmission intertie cable connecting between Zone K and the rest of the New York Control Area.
- Additional transmission expansion or upgrades, as necessary, to facilitate the full output of at least 3,000 MW of Long Island offshore wind under summer peak and light load conditions.

Evaluation and Selection Criteria for the Public Policy Transmission Project

For the purposes of evaluation and selection of the more efficient or cost effective Public Policy Transmission Project to address the LI PPTN, the following criteria will be applied:

- 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.
- The ability of a Public Policy Transmission Project to enable greater levels of offshore wind energy delivery from Long Island to the rest of New York will be valued in the evaluation process. Scenarios representing Long Island offshore wind in excess of 3,000 MW will be used to evaluate project performance with respect to the expandability and other metrics. The evaluation will include, among other potential scenarios, an "Alternate Scenario" which models 6,000 MW of offshore wind connected to New York City and 6,000 MW connected to Long Island.
- The following additional criteria was identified in the NYPSC Order:
    - The NYISO's analysis should ensure no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions.

- The analysis should also ensure the system would be maintained in a reliable manner.
- The NYISO shall also consider other metrics in its evaluation of this Public Policy Requirement, including: changes in production costs; Load-Based Marginal Prices; transmission losses; emissions; Installed Capacity costs; Transmission Congestion Contract revenues; transmission congestion; impacts on transfer limits; and, resource deliverability.[1]

PPTN-specific Project Information

- For the purpose of determining Sufficiency, constraints do not need to be resolved for facilities that are:
  - operated at a voltage below 100 kV;
  - not significantly impacted by the injection of power from Long Island offshore wind projects; or
  - 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.
- Developers shall identify which Project components are new facilities, upgrades[2], or Network Upgrade Facilities[3], as described in the Public Policy Transmission Planning Process Manual Attachments B and C. NYISO will review the classification of Project components and, if necessary, ask the Developer for clarification or correction.

Baseline Study Cases

The study cases used in the baseline analysis (Baseline Scenario) for the LI PPTN are based on the NYISO 2021 FERC 715 filing with the following major modifications:

- Offshore wind generation modeled at full output:
  - ~3,000 MW connected to Zone K (Long Island): 139 MW @ East Hampton 69 kV, 880 MW @ Holbrook 138 kV, 1,260 MW @ Barrett 138 kV, 800 MW @ Ruland Rd 138 kV
  - ~6,000 MW connected to Zone J (New York City): 816 MW @ Gowanus 345 kV, 1,230 MW @ Astoria 138 kV, 1,310 MW @ Farragut East 345 kV, 1,310 MW Farragut West 345 kV, and 1,310 MW West 49th St. 345 kV
- Load levels:
  - Zone K: 4,423 MW (including 499 MW behind-the-meter solar) in the Summer Peak case and 1,107 MW (including 1,108 MW behind-the-meter solar) in the Light Load case
  - Zone J: 11,195 MW (including 290 MW behind-the-meter solar) in the Summer Peak case and 4,524 MW in the Light Load case (including 644 MW behind-the-meter solar)
- Imports:
  - Summer Peak: Norwalk – Northport = 0 MW, Cross Sound Cable = 0 MW, Neptune = 660 MW, Zone J Generic HVDC @ Rainey 345 kV = 1,310 MW

[1] PSC Order, at 24.
[2] OATT Attachment Y 31.6.4
[3] OATT Attachment P 22.1

  - Light Load: Norwalk – Northport = 0 MW, Cross Sound Cable = 0 MW, Neptune = 0 MW, Zone J Generic HVDC @ Rainey 345 kV = 0 MW
- Dispatch of existing generators:
  - Following recommendations of the Transmission Owners ConEdison and LIPA, certain existing generators are kept dispatched on to maintain local reliability. The details can be found in the power flow cases.

In addition to the Baseline Scenario, an Alternate Scenario is available with the following distinction:

- Offshore wind generation modeled at full output:
  - ~6,000 MW connected to Zone J: 816 MW @ Gowanus 345 kV, 1,230 MW @ Astoria 138 kV, 1,310 MW @ Farragut East 345 kV, 1,310 MW Farragut West 345 kV, and 1,310 MW West 49th St. 345 kV
  - ~6,000 MW connected to Zone K: 139 MW @ East Hampton 69 kV, 1,050 MW @ Holbrook 138 kV, 1,350 MW @ Barrett 138 kV, 1,150 MW @ Ruland Rd. 138 kV, 1,150 MW @ East Garden City 345 kV, and 1,150 MW @ Northport 138 kV

The Baseline Scenario cases will be used in the Viability & Sufficiency Assessment to determine sufficiency, while the Alternate Scenario will be used to assess the transmission solutions' performance in the expandability metric and other metrics in the evaluation and selection of the more effective or cost efficient solution. Other scenarios, including scenarios representing achievement of the CLCPA Public Policy Requirement, may also be utilized in the evaluation and selection phase.

The Baseline and Alternate Scenario study cases are available, subject to a Critical Energy Infrastructure Information (CEII) request:

https://nyiso.tfaforms.net/187

Baseline Study Results

Baseline and Alternate Scenario study results are publicly available on the NYISO website under Public Policy Documents at

https://www.nyiso.com/documents/20142/22968753/LI-PPTN-BaselineResults.xlsx/c91543ab-c542-3139-64a8-46357f886362

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Attachment II

Study Agreement for Evaluation of Public Policy Transmission Projects

STUDY AGREEMENT FOR
EVALUATION OF PUBLIC POLICY TRANSMISSION PROJECTS

THIS AGREEMENT is made and entered into this ____ day of _____, 2021 by and between _____, a _____ organized and existing under the laws of the State of _____("Developer"), and the New York Independent System Operator, Inc., a not-for-profit corporation organized and existing under the laws of the State of New York ("NYISO"). Developer and NYISO each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, Developer is proposing to develop a Public Policy Transmission Project to satisfy one or more identified Public Policy Transmission Needs ("Transmission Project");

WHEREAS, pursuant to Sections 31.4.3.1, 31.4.4.3, and 31.4.4.4 of Attachment Y to the ISO OATT, the NYISO has requested that all entities interested in proposing a Transmission Project submit specific solutions to the Public Policy Transmission Need, including: (i) submitting their project information and an application fee for purposes of being evaluated in the NYISO's Public Policy Transmission Planning Process, and (ii) executing this Agreement and submitting a study deposit for purposes of the NYISO's evaluation and selection of the more efficient or cost-effective transmission solution to the identified Public Policy Transmission Need(s);

WHEREAS, Developer has requested the NYISO to evaluate its Transmission Project for the purpose of selecting the more efficient or cost-effective transmission solution to the identified Public Policy Transmission Need(s);

WHEREAS, pursuant to Sections 31.4.3.1, 31.4.4.3, and 31.4.4.4 of Attachment Y to the ISO OATT, Developer will submit, together with the execution of this Agreement, its project information, application fee, and study deposit for the purpose of the NYISO evaluating its Transmission Project.

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1.0 When used in this Agreement, with initial capitalization, the terms specified but not otherwise defined herein shall have the meanings indicated in Section 31.1.1 of Attachment Y to the ISO OATT, or if not defined therein, in the ISO OATT.

2.0 Developer elects, and the NYISO shall cause to be performed, an evaluation of the Transmission Project in accordance with Sections 31.4.7, 31.4.8, 31.4.9, 31.4.10, and 31.4.11 of Attachment Y to the ISO OATT, along with any required additional evaluation

or re-evaluation of the Transmission Project, for the purpose of the NYISO's selection of the more efficient or cost-effective transmission solution to satisfy the identified Public Policy Transmission Need(s) ("Evaluation"). The terms of Sections 31.4.7, 31.4.8, 31.4.9, 31.4.10, and 31.4.11 of Attachment Y to the ISO OATT, as applicable, are hereby incorporated by reference herein. The NYISO will not commence its Evaluation of the Transmission Project prior to determining that: (i) Developer's Transmission Project is viable and sufficient in accordance with Section 31.4.6 of Attachment Y to the ISO OATT, and (ii) Developer has provided to the NYISO the required notification to proceed with the Evaluation of the Transmission Project in accordance with Section 31.4.6.6 of Attachment Y to the ISO OATT.

3.0 Upon the execution of this Agreement, Developer shall provide the NYISO with the project information for its Transmission Project in accordance with Section 31.4.4.3 of Attachment Y to the ISO OATT. Developer shall provide the project information required under Section 31.4.5.1 of Attachment Y to the ISO OATT.

4.0 Upon the execution of this Agreement, Developer shall also provide the NYISO with a deposit of $100,000 in accordance with Section 31.4.4.4 of Attachment Y to the ISO OATT to secure Developer's payment of the NYISO's expenses incurred in performing the Evaluation. The NYISO will not commence its Evaluation of the Transmission Project prior to its receipt of Developer's study deposit. The NYISO shall invoice, and Developer shall pay to the NYISO, the actual costs of the Evaluation in accordance with Section 31.4.4.4 of Attachment Y to the ISO OATT. Upon settlement of the final invoice, the NYISO will return to Developer any remaining portion of the study deposit, including any accrued interest, in accordance with Section 31.4.4.4 of Attachment Y to the ISO OATT.

5.0 The NYISO will use the project information provided by Developer as described in Section 3.0 above as an input for its Evaluation; *provided, however*, that pursuant to Section 31.4.8 of Attachment Y to the ISO OATT, the ISO may engage an independent subcontractor consultant to review the reasonableness and comprehensiveness of the project information provided by Developer and may rely on the independent subcontractor consultant's analysis of the project information in performing its Evaluation. The NYISO reserves the right to request additional project information from Developer as may become necessary in accordance with Section 31.4.4.3.5 of Attachment Y to the ISO OATT, and Developer shall submit such additional information within 15 days of the NYISO's request as required under Section 31.4.4.3.8 of Attachment Y to the ISO OATT. Developer shall meet with the NYISO, as the NYISO deems necessary, to discuss Developer's project information.

6.0 The scope of the Evaluation shall be subject to the study purposes and criteria set forth in Attachment Y to the ISO OATT and to the assumptions set forth in Attachment A to this Agreement.

7.0 As part of the NYISO's Evaluation of the Transmission Project and prior to identifying the more efficient or cost-effective transmission solution to meet the Public Policy Transmission Need(s), the NYISO will provide Developer with a summary of its findings regarding the project information submitted by Developer and will meet with Developer to discuss its findings and to address any questions regarding the project information. After completing the required analysis of all of the proposed regulated transmission solutions and identifying the more efficient or cost-effective transmission solution, the NYISO will provide all stakeholders with the results of its analysis, including which regulated transmission solution has been identified as the more efficient or cost-effective transmission solution to the Public Policy Transmission Need(s), in the Public Policy Transmission Planning Report pursuant to Section 31.4.11 of Attachment Y to the ISO OATT.

8.0 Miscellaneous.

8.1 Accuracy of Information. Except as Developer may otherwise specify in writing when it provides information to the NYISO under this Agreement, Developer represents and warrants that to the best of its knowledge and belief the information it has provided or subsequently provides to the NYISO is and shall be accurate and complete as of the date the information is provided. Developer shall promptly provide the NYISO with any additional information needed to update information previously provided.

8.2 Disclaimer of Warranty. In performing the Evaluation, the NYISO and any subcontractor consultants engaged by the NYISO will have to rely on information provided by Developer, and possibly by third parties, and may not have control over the accuracy of such information. Accordingly, neither the NYISO nor any subcontractor consultant engaged by the NYISO makes any warranties, express or implied, whether arising by operation of law, course of performance or dealing, custom, usage in the trade or profession, or otherwise, including without limitation implied warranties of merchantability and fitness for a particular purpose, with regard to the accuracy, content, or conclusions of the Evaluation performed pursuant to this Agreement and the ISO OATT. Developer acknowledges that it has not relied on any representations or warranties by the NYISO or its subcontractor consultants not specifically set forth herein and that no such representations or warranties have formed the basis of its bargain hereunder.

8.3 Limitation of Liability. The NYISO or any subcontractor consultants engaged by the NYISO shall not be liable for direct damages, including money damages or other compensation, for actions or omissions by the

NYISO or a subcontractor consultant in performing its obligations under this Agreement, except to the extent such act or omission by the NYISO or a subcontractor consultant is found to result from its gross negligence or willful misconduct. In no event shall either Party or its subcontractor consultants be liable for indirect, special, incidental, punitive, or consequential damages of any kind including loss of profits, arising under or in connection with this Agreement and the ISO OATT or any reliance on the Evaluation by any Party or third parties, even if one or more of the Parties or its subcontractor consultants have been advised of the possibility of such damages. Nor shall either Party or its subcontractor consultants be liable for any delay in delivery or for the non-performance or delay in performance of its obligations under this Agreement.

8.4 Third-Party Beneficiaries. Without limitation of Sections 8.2 and 8.3 of this Agreement, Developer further agrees that subcontractor consultants hired by NYISO to conduct or review, or to assist in the conducting or reviewing, the Evaluation of the Transmission Project shall be deemed third party beneficiaries of these Sections 8.2 and 8.3.

8.5 Term and Termination. This Agreement shall be effective from the date hereof and, unless earlier terminated in accordance with this Section 8.5, shall continue in effect until completion of the Evaluation, which shall be the later of: (i) the date on which the NYISO Board of Directors' approval of the Public Policy Transmission Planning Process report for the planning cycle is final and not the subject of dispute resolution or a challenge before a court or regulatory body, and (ii) the date on which the New York State Public Service Commission issues the Article VII certification for a regulated transmission solution that satisfies the identified Public Policy Transmission Need(s). Developer or NYISO may end the Evaluation and terminate this Agreement upon: (i) the withdrawal by Developer of its Transmission Project, including its failure to provide the required notification to proceed under Section 31.4.6.6 of Attachment Y to the ISO OATT; (ii) the rejection by the NYISO of the Transmission Project from further consideration during the planning cycle in accordance with the ISO OATT; or (iii) any changes by the New York State Public Service Commission to the identified Public Policy Transmission Need(s), including withdrawal of the Public Policy Transmission Need(s), that eliminate the need for the Transmission Project.

8.6 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to any choice of laws provisions.

8.7 Severability. In the event that any part of this Agreement is deemed as a matter of law to be unenforceable or null and void, such unenforceable or void part shall be deemed severable from this Agreement and the Agreement shall continue in full force and effect as if each part was not contained herein.

8.8 Counterparts. This Agreement may be executed in counterparts, and each counterpart shall have the same force and effect as the original instrument. A signed copy of this Agreement delivered by facsimile, e-mail or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement.

8.9 Amendment. No amendment, modification or waiver of any term hereof shall be effective unless set forth in writing signed by the Parties hereto.

8.10 Survival. All warranties, limitations of liability and confidentiality provisions provided herein and the payment obligations provided under Section 4.0 shall survive the expiration or termination of this Agreement.

8.11 Independent Contractor. NYISO shall at all times be deemed to be an independent contractor for purposes of this Agreement and none of its employees or the employees of its subcontractors shall be considered to be employees of Developer as a result of this Agreement.

8.12 No Implied Waivers. The failure of a Party to insist upon or enforce strict performance of any of the provisions of this Agreement shall not be construed as a waiver or relinquishment to any extent of such party's right to insist or rely on any such provision, rights and remedies in that or any other instances; rather, the same shall be and remain in full force and effect.

8.13 Successors and Assigns. This Agreement, and each and every term and condition hereof, shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

8.14 Confidentiality. NYISO shall maintain the project information submitted by Developer under this Agreement in accordance with the requirements

set forth in Sections 31.4.4.3.10, 31.4.4.3.11, and 31.4.15 of Attachment Y to the ISO OATT.

IN WITNESS THEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents and to be effective from the day and year first above written.

NYISO

By: _____

Name:_____

Title: _____

Date: _____

_____

(Developer's Name)

By: _____

Name: _____

Title: _____

Date: _____

Exhibit No. TRANSCO-103

NYISO BOARD OF DIRECTORS' DECISION

ON

APPROVAL OF LONG ISLAND OFFSHORE WIND EXPORT PUBLIC POLICY TRANSMISSION PLANNING REPORT AND SELECTION OF PUBLIC POLICY TRANSMISSION PROJECT

JUNE 13, 2023

EXECUTIVE SUMMARY

Today we select a transmission project that will benefit New York State's electric consumers by enabling the delivery of renewable power required to meet state energy goals and relieving congestion while enhancing New York State's already high standard of system reliability. Our action constitutes a significant decision by the New York Independent System Operator ("NYISO") Board of Directors ("Board") and the culmination of a multi-year, joint effort by the NYISO, New York State Public Service Commission ("NYPSC"), developers, and stakeholders to address transmission needs in and around Long Island.

We are making this selection in accordance with the requirements of the NYISO's Public Policy Transmission Planning Process ("Public Policy Process") established in Attachment Y of the NYISO's Open Access Transmission Tariff ("OATT"). Pursuant to this process, the NYISO is responsible for selecting the more efficient or cost-effective transmission solution from among competing projects to address a transmission need driven by a public policy requirement identified by the NYPSC.

For several years, the NYISO has stressed the necessity of reinforcing the Long Island transmission system to reliably deliver offshore wind resources driven by the public policy requirements of both the New York Clean Energy Standard ("CES") and New York Climate Leadership and Community Protection Act ("CLCPA"), which requires development of 9,000 MW of offshore wind power by 2035. Given the long lead time necessary for transmission development in New York, the NYISO supported a finding of transmission needs throughout the last three cycles of its Public Policy Process. With five offshore wind projects in active development totaling more than 4,300 MW scheduled to enter service within the next five years and many more proposed, New York has an urgent need for transmission solutions to reliably deliver that renewable energy to consumers. On March 19, 2021, the NYPSC issued an order declaring that the CLCPA constitutes a public policy requirement driving the need for transmission to, among other things, increase the export capability from Long Island to the rest of the state to ensure access to the full output of a minimum of 3,000 MW of offshore wind (the "Long Island Need").[1]

[1] Case No. 20-E-0497, *In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2020, Order Addressing Public Policy Requirements for Transmission Planning Purposes* (Mar. 19, 2021), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={8C8F3D7A-4FEB-4B18-88F5-82CF587895C9}.

NYISO staff solicited solutions to the Long Island Need and received a number of well-developed, high-quality proposals. NYISO staff and its consultants performed detailed studies and analyses to determine which solutions were viable and sufficient to meet the identified need and then evaluated the projects' performance across a wide range of quantitative and qualitative metrics established in the OATT. NYISO staff detailed the results of its analyses and its recommendations for project ranking and selection in its Long Island Offshore Wind Export Public Policy Transmission Planning Report ("Long Island Planning Report" or "Report"). Stakeholders and developers submitted comments throughout the stakeholder committee process, culminating in an advisory vote by the Management Committee on May 31, 2023, recommending approval of the Report. The Board carefully considered these comments in making its determination.

For reasons set forth below, we approve the Long Island Planning Report and select Propel NY's T051 Alternate 5 Project[2] as the more efficient or cost-effective transmission solution to address the Long Island Need. The required project in-service date is May 2030.

BACKGROUND

Long Island Need

The NYISO Public Policy Process is the means by which the NYISO addresses transmission needs driven by public policy requirements identified by the NYPSC. The Long Island Need drew upon extensive analyses performed by the NYISO and others concerning the benefits of providing new transmission within Long Island and connecting Long Island to the rest of the state to support the development of offshore wind.

The CLCPA mandates that New York State procure 9,000 MW of offshore wind power by 2035. The Long Island coast is an excellent location for new offshore wind resources and is close to major load centers in New York City and Long Island. Power generated from these resources could also be exported to the rest of the state. However, the Long Island transmission system is currently very limited and would result in significant periods of wind energy curtailment during which the available wind energy would not be delivered to New York ratepayers. The NYISO has therefore highlighted since 2016 the importance of reinforcing the Long Island transmission system so that offshore wind resources driven by the CES and CLCPA can be reliably delivered.

On August 3, 2020, the NYISO commenced the 2020-2021 cycle of the Public Policy Process. The NYISO solicited and submitted to the NYPSC potential transmission needs, including the recognition of Long Island constraints. The Long Island Power Authority (LIPA) also filed with the NYPSC its determination that a public policy requirement drives the need for a physical modification to transmission facilities in the Long Island Transmission District. On March 19, 2021, the NYPSC issued an order identifying the Long Island Need to increase the export capability from Long Island to the rest of the state to ensure the full output of offshore wind interconnected to Long Island.

[2] Propel NY is a partnership between New York Transco, LLC, and the New York Power Authority ("NYPA").

NYISO Evaluation of Proposed Solutions and Draft Long Island Planning Report

On August 12, 2021, the NYISO issued a solicitation for solutions to the Long Island Need. Developers submitted nineteen proposals. Of these, the NYISO determined that sixteen were both viable and sufficient to address the Long Island Need and eligible for evaluation and selection. Consistent with the implementation of the recently adopted mechanism to effectuate the Transmission Owner's right of first refusal for upgrades to existing facilities, the NYISO posted on its website, a characterization of project facilities as either new or public policy transmission upgrades.

NYISO staff, in coordination with its independent consultant, Substation Engineering Company ("SECO"), conducted a detailed evaluation and ranked each proposal based on its performance across the metrics established in the OATT and those metrics specified by the NYPSC. These quantitative and qualitative metrics include the project's capital cost, voluntarily submitted cost cap,[3] cost per MW, expandability, operability, performance, property rights and routing, the potential issues associated with construction delays, and other metrics (*e.g.*, production cost savings, capacity savings, and congestion). NYISO staff used multiple scenarios and sensitivities to comparatively evaluate the proposed projects' performance across these metrics. In April 2023, the Board met in-person with the individual developers to examine the merits of their proposals and to discuss specific operational, financial and other concerns about their projects.

NYISO staff developed a draft Long Island Planning Report that detailed the results of its analysis and proposed ranking of the projects. The draft Report recommended selection of Propel NY's T051 Alternate 5 proposal, which proposes three new 345 kV AC tie lines from Long Island to the rest of the state and a 345 kV transmission backbone on Long Island, as the more efficient or cost-effective transmission solution. The draft Long Island Planning Report was reviewed with stakeholders and developers in a series of joint Electric System Planning Working Group ("ESPWG") and Transmission Planning Advisory Subcommittee ("TPAS") meetings. In addition, the Market Monitoring Unit ("MMU") reviewed and evaluated the impact of the proposed projects on the NYISO-administered markets.[4] Both the Business Issues Committee and Management Committee subsequently reviewed and recommended Board approval of the draft Long Island Planning Report by unanimous vote, with abstentions.

Market Monitoring Unit Review and Evaluation

In accordance with the OATT, the independent market monitor, Potomac Economics (the "MMU"), provided a report detailing its review of the recommended project's impact on the NYISO-administered markets. The MMU found that NYISO staff's recommended project fulfills

[3] The NYISO for the first time in a public policy evaluation considered proposed voluntary cost caps for the projects pursuant to recently adopted tariff requirements. All developers submitted voluntary cost caps in their proposals for the Long Island Need. The NYISO assessed the proposed cost caps for their effectiveness to incentivize cost containment and protect ratepayers from cost overruns, along with the likelihood that the project can be constructed at the cost cap amount.

[4] *See* Potomac Economics, *NYISO MMU Evaluation of the Long Island Offshore Wind Export PPTP Report* (May 2023) ("MMU Report"), https://www.nyiso.com/documents/20142/37825607/DRAFT%20Appendix%20C%20-%20Market%20Monitoring%20Unit%20Report.pdf.

the Long Island Need and contributes towards meeting the underlying public policy requirement. Additionally, the MMU found that the greatest economic benefits are realized in the later years of the analysis with limited economic benefit before 2040. As a result, the MMU concluded that "it is not advisable to move forward with one of the proposed transmission projects at this time given the magnitude and timing of the potential benefits. This process could be re-initiated in future years if warranted." The MMU's Conclusion also states, in part, "if the NYISO determines that it must or should select a project, we recommend that it reconsider its recommendation of T051 since it does not appear to be the most cost-effective project."[5]

Written Comments on the Long Island Planning Report

Equinor submitted comments supporting the NYISO's Public Policy Process and noted "an urgency to completing transmission upgrades as soon as possible."[6] Equinor opined that Propel NY's T051 Alternate 5 proposal "provides more longer-term benefits" while Propel NY's T049 Base 3 proposal "provides greater short-term benefits" and "has a lower total cost."[7]

The New York Offshore Wind Alliance ("NYOWA") submitted comments "urging" the Board to adopt the Long Island Planning Report's recommendations.[8] NYOWA asserted that the Board should reject "no action" and "more limited alternatives" to those recommended in the Long Island Planning Report for a variety of reasons, including that (1) "the quantitative benefits (not counting the qualitative benefits) of the selected solution are comparable to or exceed the costs"; (2) "the no/limited action alternatives do not fully address the Long Island congestion issue" and will risk the curtailment of offshore wind resources ("OSW"); and (3) "failure to address the Long Island constraint will reduce competition in the OSW generation market."[9]

PSEG Long Island commended the NYISO for its work in preparing the Long Island Planning Report and its selection recommendation.[10] PSEG Long Island, however, stated that it has "insufficient information to support a May 2030 in service date."[11] PSEG Long Island also provided a list of "high-level concerns and considerations" and expressed a desire to "better understand how as yet unidentified risks from future studies can be factored into the in-service date for the selected project."[12]

BOARD DECISION

We appreciate the significant work that developers dedicated to their project proposals. The Board's extensive deliberations in this Public Policy Process reflect the quality of the proposals and the involvement of all the developers in the stakeholder and Board processes. We

[5] *Id.* at 24.

[6] Equinor Comments to Draft Long Island Planning Report, https://www.nyiso.com/documents/20142/37705557/EquinorComments_05_015_2023.pdf.

[7] *Id.*

[8] New York Offshore Wind Alliance Comments to Draft Long Island Planning Report at 1 (May 22, 2023), https://www.nyiso.com/documents/20142/37705557/Final%20Comments_NYOWA_LIPPTN.pdf.

[9] *Id.* at 3-4.

[10] PSEG Long Island Comments to Draft Long Island Planning Report, https://www.nyiso.com/documents/20142/37705557/PSEGLI_comments_05172023.pdf.

[11] *Id.*

[12] *Id.*

also acknowledge the hard work performed by NYISO staff in administering the Public Policy Process for the Long Island Need and the participation of the other stakeholders, the MMU, and NYPSC staff, including the extensive time and resources they have dedicated and the valuable feedback they have provided.

Board Responsibilities

The Board is responsible in the Public Policy Process for reviewing and acting on a public policy transmission planning report, including evaluating the rankings of the proposed transmission solutions and the selection of the more efficient or cost-effective transmission solution to address a public policy transmission need.

The OATT does not establish a specific formula or weighting of metrics for the NYISO to identify the more efficient or cost-effective transmission project. It is important to understand that the NYISO's selection metrics may not equate to the least cost solution. Rather, the NYISO carefully assesses and ranks each proposed project's total performance across all of the numerous qualitative and quantitative metrics established in the OATT using a range of scenarios and sensitivities. The NYISO then solicits and considers input from developers, stakeholders, and other interested parties concerning its analysis and recommendations and presents the results in the Public Policy Transmission Planning Report. The Board then exercises its independent judgment in evaluating the report.

Board Approval of Long Island Planning Report, Project Ranking, and Project Selection

Based upon our review, consideration, recognition that timely action is necessary to allow the construction to complete in time to satisfy the need, the extensive deliberations concerning the Long Island Need, stakeholders' and developers' comments, and the MMU's market impact analysis, we approve the Long Island Planning Report without modification, and select Propel NY's T051 Alternate 5 proposal. The "Designated Entities"[13] for the selected project may recover their costs through the OATT in rates accepted by FERC.

We agree with NYISO staff's conclusion that Propel NY's T051 Alternate 5 proposal is the more efficient or cost-effective transmission solution to address the Long Island Need, based on its overall performance across the various selection metrics. T051 cost-effectively offers expandability, operability, and performance benefits from three new AC tie lines from Long Island to the rest of the state. T051 has relatively low procurement, permitting, and construction risks compared to other proposals, and adds a strong 345 kV backbone to the Long Island transmission system that will help serve Long Island load with the future generation changes needed to meet the CLCPA. Although T051 does not fully address congestion on the Barrett-Valley Stream path, it has a third 345 kV AC tie line that provides optionality for resource planning and expansion, and the project's potential economic benefits are expected to be comparable with, if not exceed, its costs.

[13] In addition to Propel NY, Consolidated Edison Company of New York, Inc., NYPA, and LIPA are identified in the Long Island Planning Report as Designated Entities for the upgrades to their existing facilities in Propel NY's T051 Alternate 5 proposal.

Finally, the Board has concluded that selecting Propel NY's T051 Alternate 5 proposal would not have an adverse impact on the competitiveness of the NYISO-administered markets. Rather, the addition of the proposal will relieve transmission congestion and provide a myriad of additional economic and performance benefits such as, but not limited to, increased operational flexibility, improved transmission system resiliency, reduced emissions from curtailments due to transmission system congestion, and the policy objectives on the part of New York State. Moreover, while the MMU concluded that T051 "does not appear to be the most cost-effective project" and that "[i]t is not advisable to move forward with one of the proposed transmission projects at this time,"[14] the Public Policy Process is designed to identify the "more efficient or cost-effective" solution to transmission needs driven by important public policy considerations.[15] Given the NYPSC's identification of the Long Island Need, the CLCPA's commitment to developing 9,000 MW of offshore wind by 2035, and the selection criteria set forth in the OATT, the Board does not agree with the MMU's recommendations. As the NYPSC previously noted, "there is no requirement in the Public Service Law that the Commission determine a Project is economically feasible to support a determination that the Project is needed and in the Public Interest."[16] The Board agrees with the NYISO staff's evaluation and recommendation to select T051 as the best proposal to address the Long Island Need.

In sum, Propel NY's T051 Alternate 5 proposal will address an important public policy transmission need by helping to increase the export capability from Long Island to the rest of the state and ensuring access to Long Island's offshore wind generation. T051 will also reduce congestion and help serve Long Island load as the generation mix continues to change in response to the public policies identified by New York State, all in an efficient and cost-effective manner. The Board's approval of the proposal constitutes a significant decision that will provide considerable benefits to New York State's electric consumers.

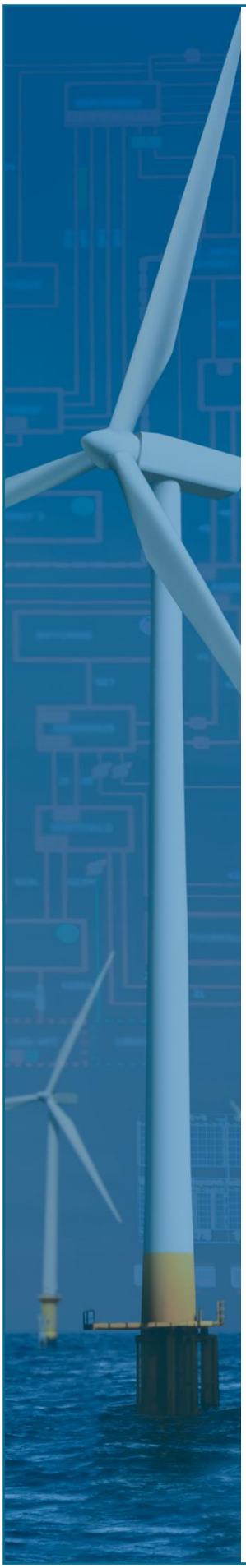
# # #

[14] MMU Report, *supra* note 4, at 24.

[15] NYISO Manual 36: Public Policy Transmission Planning Process Manual at 9 (June 8, 2020), https://www.nyiso.com/documents/20142/2924447/M-36_Public%20Policy%20Manual_v1_0_Final.pdf.

[16] *Case No. 19-T-0549, Application of LS Power Grid New York, LLC, LS Power Grid New York Corporation I, and the New York Power Authority for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII for Edic/Marcy to New Scotland; Princetown to Rotterdam Project, Order Adopting Joint Proposal* at 76 (Jan. 21, 2021), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={0FFC426D-B355-4F2B-9498-9C1A295962F6}.

Exhibit No. TRANSCO-104



New York ISO
Independent System Operator

Long Island Offshore Wind Export Public Policy Transmission Plan

A Report from the New York Independent System Operator

June 13, 2023

NYISO BOARD OF DIRECTORS' DECISION

ON

APPROVAL OF LONG ISLAND OFFSHORE WIND EXPORT PUBLIC POLICY TRANSMISSION PLANNING REPORT AND SELECTION OF PUBLIC POLICY TRANSMISSION PROJECT

JUNE 13, 2023

EXECUTIVE SUMMARY

Today we select a transmission project that will benefit New York State's electric consumers by enabling the delivery of renewable power required to meet state energy goals and relieving congestion while enhancing New York State's already high standard of system reliability. Our action constitutes a significant decision by the New York Independent System Operator ("NYISO") Board of Directors ("Board") and the culmination of a multi-year, joint effort by the NYISO, New York State Public Service Commission ("NYPSC"), developers, and stakeholders to address transmission needs in and around Long Island.

We are making this selection in accordance with the requirements of the NYISO's Public Policy Transmission Planning Process ("Public Policy Process") established in Attachment Y of the NYISO's Open Access Transmission Tariff ("OATT"). Pursuant to this process, the NYISO is responsible for selecting the more efficient or cost-effective transmission solution from among competing projects to address a transmission need driven by a public policy requirement identified by the NYPSC.

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For reasons set forth below, we approve the Long Island Planning Report and select Propel NY's T051 Alternate 5 Project[2] as the more efficient or cost-effective transmission solution to address the Long Island Need. The required project in-service date is May 2030.

BACKGROUND

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The NYISO Public Policy Process is the means by which the NYISO addresses transmission needs driven by public policy requirements identified by the NYPSC. The Long Island Need drew upon extensive analyses performed by the NYISO and others concerning the benefits of providing new transmission within Long Island and connecting Long Island to the rest of the state to support the development of offshore wind.

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the Long Island Need and contributes towards meeting the underlying public policy requirement. Additionally, the MMU found that the greatest economic benefits are realized in the later years of the analysis with limited economic benefit before 2040. As a result, the MMU concluded that "it is not advisable to move forward with one of the proposed transmission projects at this time given the magnitude and timing of the potential benefits. This process could be re-initiated in future years if warranted." The MMU's Conclusion also states, in part, "if the NYISO determines that it must or should select a project, we recommend that it reconsider its recommendation of T051 since it does not appear to be the most cost-effective project."[5]

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Board Responsibilities

The Board is responsible in the Public Policy Process for reviewing and acting on a public policy transmission planning report, including evaluating the rankings of the proposed transmission solutions and the selection of the more efficient or cost-effective transmission solution to address a public policy transmission need.

The OATT does not establish a specific formula or weighting of metrics for the NYISO to identify the more efficient or cost-effective transmission project. It is important to understand that the NYISO's selection metrics may not equate to the least cost solution. Rather, the NYISO carefully assesses and ranks each proposed project's total performance across all of the numerous qualitative and quantitative metrics established in the OATT using a range of scenarios and sensitivities. The NYISO then solicits and considers input from developers, stakeholders, and other interested parties concerning its analysis and recommendations and presents the results in the Public Policy Transmission Planning Report. The Board then exercises its independent judgment in evaluating the report.

Board Approval of Long Island Planning Report, Project Ranking, and Project Selection

Based upon our review, consideration, recognition that timely action is necessary to allow the construction to complete in time to satisfy the need, the extensive deliberations concerning the Long Island Need, stakeholders' and developers' comments, and the MMU's market impact analysis, we approve the Long Island Planning Report without modification, and select Propel NY's T051 Alternate 5 proposal. The "Designated Entities"[13] for the selected project may recover their costs through the OATT in rates accepted by FERC.

We agree with NYISO staff's conclusion that Propel NY's T051 Alternate 5 proposal is the more efficient or cost-effective transmission solution to address the Long Island Need, based on its overall performance across the various selection metrics. T051 cost-effectively offers expandability, operability, and performance benefits from three new AC tie lines from Long Island to the rest of the state. T051 has relatively low procurement, permitting, and construction risks compared to other proposals, and adds a strong 345 kV backbone to the Long Island transmission system that will help serve Long Island load with the future generation changes needed to meet the CLCPA. Although T051 does not fully address congestion on the Barrett-Valley Stream path, it has a third 345 kV AC tie line that provides optionality for resource planning and expansion, and the project's potential economic benefits are expected to be comparable with, if not exceed, its costs.

[13] In addition to Propel NY, Consolidated Edison Company of New York, Inc., NYPA, and LIPA are identified in the Long Island Planning Report as Designated Entities for the upgrades to their existing facilities in Propel NY's T051 Alternate 5 proposal.

Finally, the Board has concluded that selecting Propel NY's T051 Alternate 5 proposal would not have an adverse impact on the competitiveness of the NYISO-administered markets. Rather, the addition of the proposal will relieve transmission congestion and provide a myriad of additional economic and performance benefits such as, but not limited to, increased operational flexibility, improved transmission system resiliency, reduced emissions from curtailments due to transmission system congestion, and the policy objectives on the part of New York State. Moreover, while the MMU concluded that T051 "does not appear to be the most cost-effective project" and that "[i]t is not advisable to move forward with one of the proposed transmission projects at this time,"[14] the Public Policy Process is designed to identify the "more efficient or cost-effective" solution to transmission needs driven by important public policy considerations.[15] Given the NYPSC's identification of the Long Island Need, the CLCPA's commitment to developing 9,000 MW of offshore wind by 2035, and the selection criteria set forth in the OATT, the Board does not agree with the MMU's recommendations. As the NYPSC previously noted, "there is no requirement in the Public Service Law that the Commission determine a Project is economically feasible to support a determination that the Project is needed and in the Public Interest."[16] The Board agrees with the NYISO staff's evaluation and recommendation to select T051 as the best proposal to address the Long Island Need.

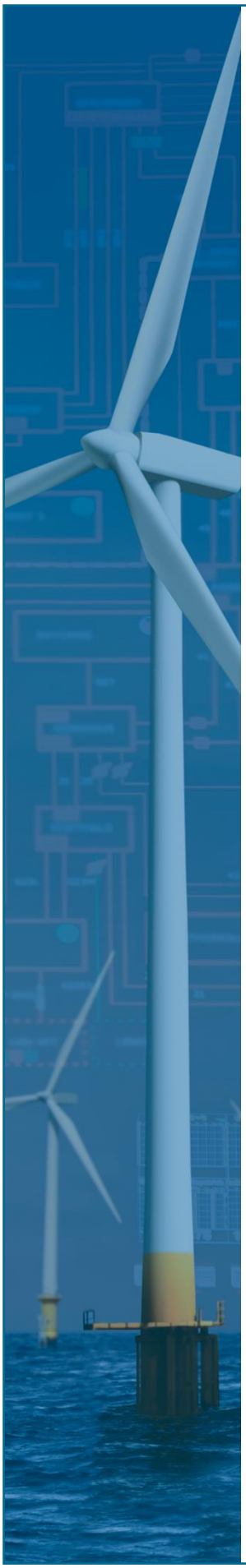
In sum, Propel NY's T051 Alternate 5 proposal will address an important public policy transmission need by helping to increase the export capability from Long Island to the rest of the state and ensuring access to Long Island's offshore wind generation. T051 will also reduce congestion and help serve Long Island load as the generation mix continues to change in response to the public policies identified by New York State, all in an efficient and cost-effective manner. The Board's approval of the proposal constitutes a significant decision that will provide considerable benefits to New York State's electric consumers.

# # #

[14] MMU Report, *supra* note 4, at 24.

[15] NYISO Manual 36: Public Policy Transmission Planning Process Manual at 9 (June 8, 2020), https://www.nyiso.com/documents/20142/2924447/M-36_Public%20Policy%20Manual_v1_0_Final.pdf.

[16] *Case No. 19-T-0549, Application of LS Power Grid New York, LLC, LS Power Grid New York Corporation I, and the New York Power Authority for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII for Edic/Marcy to New Scotland; Princetown to Rotterdam Project, Order Adopting Joint Proposal* at 76 (Jan. 21, 2021), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={0FFC426D-B355-4F2B-9498-9C1A295962F6}.



New York ISO
Independent System Operator

Long Island Offshore Wind Export Public Policy Transmission Planning Report

A Report from the New York Independent System Operator

June 13, 2023

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Executive Summary

This report presents the results of the Public Policy Transmission Planning Process administered by the New York Independent System Operator, Inc. (NYISO) for the Long Island Offshore Wind Export Public Policy Transmission Need (Long Island Need or PPTN). It represents the culmination of a multi-year, joint effort by the NYISO, the New York State Public Service Commission (PSC), Developers, and stakeholders to address transmission needs in and around Long Island that are driven by Public Policy Requirements for delivering future offshore wind power as part of the Climate Leadership and Community Protection Act (CLCPA). The NYISO conducted extensive evaluations and ranking of the proposed transmission projects and recommends the selection of the more efficient or cost-effective transmission solution to the Long Island Need as described herein.

Since 2016, the NYISO highlighted that reinforcing the transmission system on Long Island is necessary to reliably deliver offshore wind resources, first driven by the Clean Energy Standard and followed by the CLCPA that mandates 9,000 MW of offshore wind power by 2035. Given the multi-year lead time necessary for transmission development in New York, the NYISO supported a finding of transmission needs throughout the last three cycles of its Public Policy Transmission Planning Process. Moreover, the NYISO's system planning studies have supported these recommendations, including the recent *2021-2040 System & Resource Outlook* (The Outlook), which determined that future offshore wind connected to Long Island would be at a high risk of curtailment. With five offshore wind projects in active development totaling more than 4,300 MW scheduled to enter service within the next five years, New York has an urgent need for transmission solutions to deliver that renewable energy to consumers.

The NYISO commenced the 2020-2021 Public Policy Transmission Planning Process cycle by soliciting proposed transmission needs driven by Public Policy Requirements from the NYISO's stakeholders and other interested parties. The NYISO filed the proposed transmission needs for consideration by the PSC, nine of which highlighted the need for transmission associated with delivery of offshore wind energy. Long Island Power Authority (LIPA) also filed its determination that new transmission within Long Island and connecting Long Island to the rest of the state was necessary to support the development of offshore wind. Upon considering various comments submitted, including the NYISO's support for transmission needs related to Long Island, the PSC issued an order declaring that the CLCPA constitutes a Public Policy Requirement driving the need for transmission to, among other things, increase the export capability from Long Island to the rest of the state to ensure the full output of a minimum of 3,000 MW of offshore wind.

Immediately following the PSC's adoption of the Long Island Need, the NYISO performed baseline analysis to identify the specific transmission constraints that restrict the delivery of offshore wind power

from Long Island to the rest of New York State. Following review of the baseline analysis and discussions with stakeholders and prospective Developers, the NYISO issued a solicitation for solutions to address the Long Island Need. The NYISO conducted the Viability and Sufficiency Assessment for 19 projects to address the need and identified 16 viable and sufficient projects eligible for selection under the Public Policy Transmission Process.

The NYISO commenced a detailed evaluation of each viable and sufficient transmission proposal with the assistance of its independent consultant, Substation Engineering Company (SECO). The transmission projects include one proposal from LS Power Grid Corporation I (LS Power), nine from NextEra Energy Transmission New York, Inc. (NextEra), and six from Propel NY (a partnership between NY Transco and the New York Power Authority). The proposals offer a wide variety of solutions that differ in the number and location of new Long Island tie lines, the extent of new and upgraded transmission on Long Island, and transmission technology (i.e., free-flow alternating current, high-voltage direct current, and phase angle regulators). Details of the proposed projects are provided in Section 2.

In determining which of the eligible proposed transmission projects is the more efficient or cost-effective solution to satisfy the Long Island Need, the NYISO considered the metrics set forth in the tariff and directed by the PSC and performed a comparative review to rank each proposed project based on its performance under these metrics. These metrics include capital costs, voluntary cost cap, cost per MW, expandability, operability, performance, property rights and routing, development schedule, and other metrics such as production cost savings, capacity savings (including avoided cost savings), locational based marginal price (LBMP) savings, emissions savings, and congestion.

A core concept of the NYISO's evaluation and selection process is the use of an independent consultant to review each proposed project and apply a consistent methodology across all projects for establishing cost estimates, schedule estimates, and routing and constructability assessments. Utilizing detailed project information provided by the Developers, SECO developed independent capital cost and schedule estimates considering material and labor cost by equipment, engineering, and design work, permitting, site acquisition, procurement and construction work, and commissioning needed for the proposed project. SECO's cost estimates for the proposed transmission projects range from approximately $2.1 billion to $16.9 billion, with schedules ranging from 71 months to 109 months following the NYISO's selection.

The independent cost estimates are also evaluated against proposed Cost Caps. A Developer may voluntarily submit a Cost Cap as a binding commitment to contain certain categories of capital costs—defined as "Included Capital Costs"—for a proposed Public Policy Transmission Project. A Developer may submit a Cost Cap either in the form of a hard Cost Cap or a soft Cost Cap. The calculation of the total cost

estimate depends on whether a Developer submits a Cost Cap and the nature of a submitted Cost Cap. All Developers submitted voluntary Cost Caps in their proposals for the Long Island Need. LS Power submitted a hard Cost Cap, while NextEra and Propel NY submitted a range of different soft Cost Caps for their respective projects. The NYISO assessed the proposed Cost Caps for effectiveness to incentivize cost containment, protect ratepayers from overruns of Included Capital Costs, and the likelihood that the project can be constructed at the Cost Cap amount.

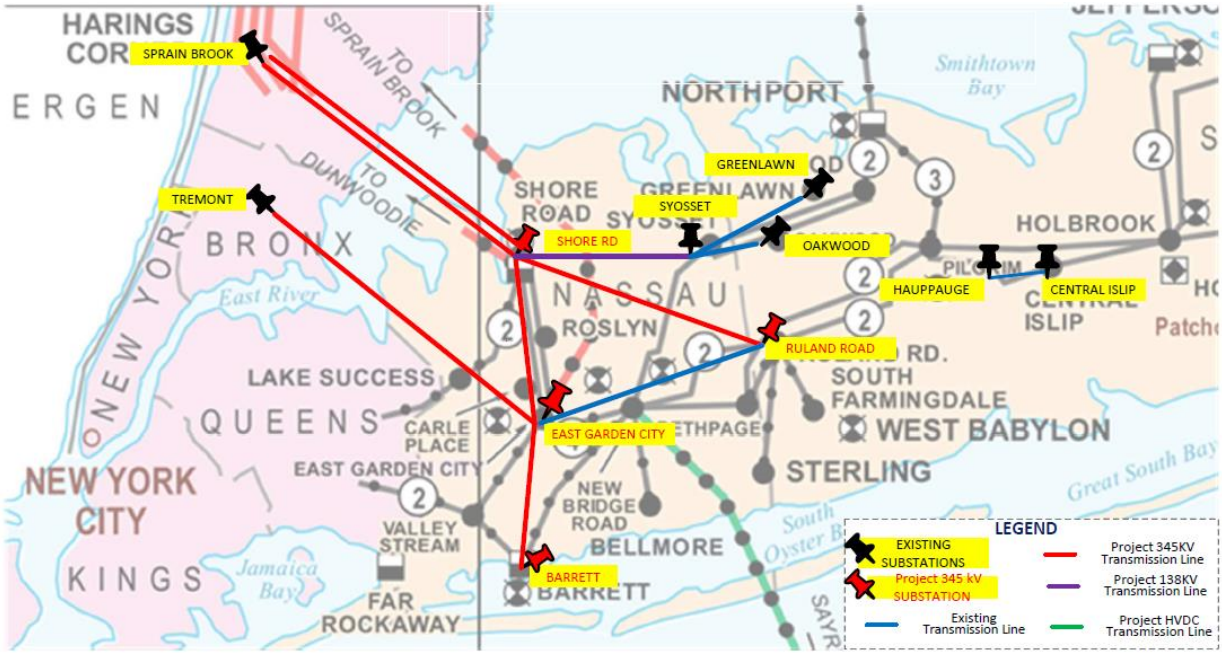
The Long Island Need introduces several unique challenges as compared to the prior Western New York and AC Transmission Public Policy Needs. Namely, these proposals mainly use underground and submarine cables proposed in new rights-of-way through densely populated areas. Therefore, a key component of the evaluation was to assess the relative risks to potential increases in project cost and schedule due to property rights, permitting concerns, and general constructability. For this assessment, SECO enlisted various sub-contractors with extensive expertise in permitting, construction, and cable design in the Long Island and New York City areas and for underground and submarine cables.

A key objective of the Long Island Need is to provide transmission capability to fully deliver the energy from at least 3,000 MW of offshore wind connected to Long Island. Each project's efficiency in achieving this objective is measured in a number of ways utilizing power flow and production cost simulations under a variety of system dispatches and conditions. Power flow results indicate that projects provide a wide range of import and export capabilities to transfer power between Long Island and the rest of the state, while providing for possible offshore wind output between 3,700 MW and 6,000 MW. Further, the increased transfer capability and relief of New York transmission constraints would result in production cost savings of as much as $900 million over the first 20 years of a project being in service. One of the more informative metrics was capacity savings determined through avoided cost analysis, which shows that additional transmission between Long Island and the rest of the state with the development of offshore wind will greatly reduce the cost of new generation buildout required for the grid transition to meet the CLCPA mandates by 2040.

The NYISO also considers qualitative metrics such as expandability, operability, performance, and the risks associated with each project. The NYISO considered how the proposed projects affect flexibility in operating the system, such as the effect of different technologies on future grid operations and the ability to operate during outage conditions. Certain projects afford greater operational flexibility through the addition of free-flow AC circuits between Long Island and the rest of the state grid, which will be important to enable the future resource mix transition.

Following consideration of all initial evaluation results, the NYISO first distinguished the proposed projects into two tiers based on their performance relative to their costs and construction risks with the projects in the top tier requiring further detailed analysis to distinguish their performance. The top-tier projects are LS Power's T035, NextEra's T036 and T040, and Propel NY's T048, T049, T051, and T052. Three metrics that significantly impacted this tiered ranking are: (1) total capital costs and cost caps, (2) property rights and routing risks, and (3) cost per MW relative to the operability range. The seven top-tier projects offer increased efficiencies in the overall performance and utilization of the transmission system resulting in greater delivery of offshore energy, while also offering cost-effective, lower-risk designs that would provide economic advantages to the New York electric grid.

Based on consideration of all the evaluation metrics for efficiency or cost effectiveness, together with input from Developers, stakeholders, and DPS and performing a detailed comparative review among the projects, the NYISO staff recommends that the Board of Directors select Propel NY's T051 Alternate 5 proposal as the more efficient or cost-effective transmission solution to satisfy the Long Island Need for cost allocation purposes. The following map shows the location of the major components proposed by T051.



T051 proposes three new 345 kV Long Island tie lines: two between Shore Road and Sprain Brook and one between East Garden City and Tremont. The project is bolstered by a Shore Road – Ruland Road – East Garden City 345 kV backbone and other transmission facilities in Long Island. T051 has a total capital cost

estimate of $3,262M and Propel NY proposed a soft Cost Cap of $2,902M with a commitment to not recover 20% of Included Capital Costs above the cap from ratepayers.

T051 adds a strong 345 kV backbone to the Long Island transmission system that not only allows the delivery of offshore wind power but also will effectuate the efficient transfer of power in the future, providing optionality for resource planning and expansion needed to achieve the CLCPA mandates. With the new facilities, the project provides 1) effective operability under a variety of outage conditions, 2) low cost per MW for transfer capability, expandability, and operating range, and 3) lower project cost and risks than larger projects. The project also provides consistent economic benefits across various future scenarios. Additionally, while the Long Island Need projects were not required to relieve the congestion on the Barrett-Valley Stream 138 kV path within Long Island, T051 partially relieves this constraint by adding a new Barrett – East Garden City 345 kV line. Furthermore, T051's potential economic benefits, estimated to be as high as $3.6 billion over 20 years, are comparable with the project cost.

The Required Project In-Service Date for the selected project is May 2030. This report identifies Propel NY, LIPA, the New York Power Authority, and Consolidated Edison Company of New York, Inc. as the Designated Entities responsible for building, owning, and recovering the costs of the project. Following the approval of this report by the NYISO Board of Directors and the finalization of the Designated Entities, the NYISO will tender a Development Agreement for each entities' respective portion of the selected transmission project.

1. Long Island Offshore Wind Export Public Policy Transmission Need

1.1 The Public Policy Transmission Planning Process

The Public Policy Transmission Planning Process (Public Policy Process) is part of the NYISO's Comprehensive System Planning Process and considers transmission needs driven by Public Policy Requirements in the local and regional transmission planning processes. The Public Policy Transmission Planning Process was developed in consultation with NYISO stakeholders and the New York State Public Service Commission (PSC) and was approved by the Federal Energy Regulatory Commission (FERC) under Order No. 1000. At its core, the Public Policy Process provides for the NYISO's evaluation and selection of transmission solutions to satisfy a transmission need driven by Public Policy Requirements. The process encourages both incumbent and non-incumbent transmission developers to propose projects in response to an identified need.

The NYISO is responsible for administering the Public Policy Process in accordance with Attachment Y to its Open Access Transmission Tariff (OATT). Consistent with its obligations to regulate and oversee the electric industry under New York State law, the PSC has the primary responsibility for the identification of transmission needs driven by Public Policy Requirements.

A Public Policy Process cycle typically commences every two years following the posting of the draft *Reliability Needs Assessment* study results, and consists of four core steps (1) the identification of a Public Policy Transmission Need, (2) developers proposing solutions to satisfy the identified Public Policy Transmission Need, (3) an evaluation of the viability and sufficiency of the proposed Public Policy Transmission Projects and Other Public Policy Projects, and (4) a comparative evaluation of the viable and sufficient projects for the NYISO Board of Directors to select the more efficient or cost-effective Public Policy Transmission Project that satisfies the Public Policy Transmission Need, if the PSC confirms that there is a need for transmission. The selected Public Policy Transmission Project is eligible for cost allocation and cost recovery under the OATT.

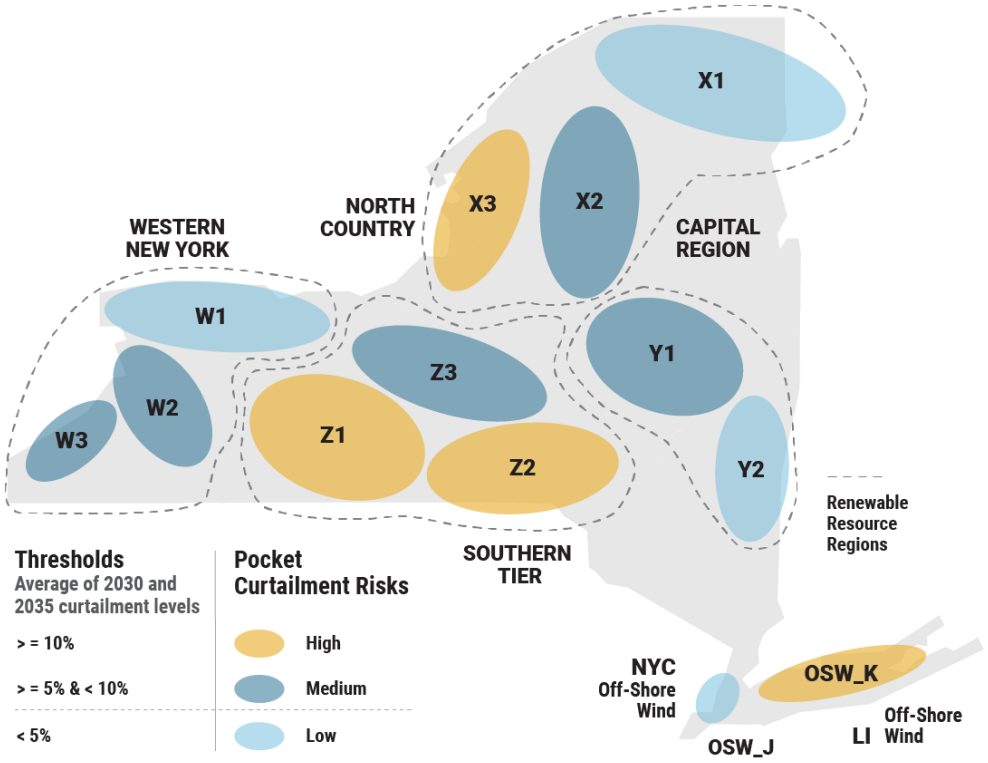
1.2 Long Island Offshore Wind Export Public Policy Transmission Need

The Climate Leadership and Community Protection Act (CLCPA) mandates that New York State procure 9,000 MW of offshore wind power by 2035. The coast along Long Island is an excellent location for the installation of offshore wind resources and has the advantage of its proximity to major load centers in New York City and Long Island. The offshore wind injection in Long Island will not only help to supply the demand within Long Island (Zone K) but could also be exported to supply Southeast New York. However, the transmission system's current export capability from Long Island is very limited. That lack

of transmission capability from Long Island to the rest of the state would result in periods of wind energy curtailment.

Since 2016, the NYISO highlighted that reinforcing the transmission system on Long Island is necessary to reliably deliver offshore wind resources that were driven by the public policy requirements of the Clean Energy Standard, followed by the CLCPA. Given the multi-year lead time necessary for transmission development in New York, the NYISO supported a finding of transmission needs throughout the last three cycles of the Public Policy Process.[1] Moreover, the potential curtailment of wind energy on Long Island is consistent with results from several studies, including the NYISO's *2021-2040 System & Resource Outlook* (The Outlook) and the *2019 Congestion Assessment and Resource Integration Study*. In the Outlook, the NYISO evaluated the transmission system based on renewable generation pockets, which are detailed in the figure below. The shaded areas summarize the findings by identifying the pockets as having a "low," "medium," or "high" risk of curtailment. The pockets with a "high" risk were determined to have both persistent and significant renewable generation curtailment within the pocket.

Figure 1: New York Renewable Generation Pocket Map



[1] *See e.g.*, Case No. 20-E-0497, *Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2018,* Comment of the New York Independent System Operator, Inc. (January 19, 2021); Case No. 18-E-0623, *Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2018,* Comment of the New York Independent System Operator, Inc. (January 22, 2019); Case No. 16-E-0558, *Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2016,* Comment of the New York Independent System Operator, Inc. (December 5, 2016).

Offshore wind generation connected to Long Island is identified as "high" risk and would be curtailed. Transmission expansion that increases the transfer capability from Long Island to the rest of the state is expected to significantly reduce the potential for offshore wind curtailment.

On August 3, 2020, the 2020-2021 cycle of the Public Policy Process commenced with a request to interested parties to submit proposed transmission needs driven by Public Policy Requirements. Responses were received from 15 entities—nine of which highlighted the need for transmission associated with the delivery of offshore wind energy across New York State. On October 9, 2020, the NYISO filed the proposed transmission needs with the PSC and the proposed transmission needs that will result in physical modifications to the Long Island Transmission District with the Long Island Power Authority (LIPA). On February 3, 2021, LIPA filed with the PSC its determination that a transmission need driven by a Public Policy Requirement exists in the Long Island Transmission District and its recommendation that specific upgrades be pursued.

On March 19, 2021, the PSC issued an Order[2] identifying the Long Island Offshore Wind Export Public Policy Transmission Need (Long Island PPTN) and referred that need to the NYISO for solicitation and evaluation under its Public Policy Process. The Order declared that the 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 offshore wind interconnected to Long Island. The Order defined the need as:

1) Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the state; and

2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.[3]

[2] Case No. 20-E-0497, *In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2020*, Order Addressing Public Policy Requirements for Transmission Planning Purposes (March 19, 2021), *available at* https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={8C8F3D7A-4FEB-4B18-88F5-82CF587895C9}

[3] *Id.* at p 23.

2. Proposed Solutions

2.1 Solicitation for Solutions

After the PSC issued the Order establishing the Long Island PPTN, the NYISO staff promptly began working to address the Long Island PPTN in its Public Policy Process. Baseline analysis identified the constraints on the existing system's capability to integrate at least 3,000 MW of Long Island offshore wind and shared the results with stakeholders and developers. Anticipating that higher amounts of offshore wind above 3,000 MW may seek to be interconnected in Long Island, the NYISO also studied an alternate scenario to integrate 6,000 MW. The NYISO provided the baseline and alternate scenario results to prospective developers.

Prior to the solicitation for solutions, the NYISO discussed the Long Island PPTN and baseline and alternate scenario results with stakeholders and interested parties at numerous meetings through the shared governance process. A Technical Conference[4] was held on July 8, 2021, with prospective developers to discuss the solicitation process, sufficiency criteria, evaluation methodology and criteria, and to address developers' questions. More than 100 external participants joined the day-long Technical Conference. Furthermore, the NYISO issued three Frequently Asked Questions (FAQ) documents[5] and posted them on the NYISO website so that all interested developers and parties had access to the information.

The NYISO began the 60-day solicitation window on August 12, 2021. Proposals were due on October 11, 2021. The solicitation letter and viability & sufficiency criteria are included in Appendix A. In response to NYISO's solicitation 19 proposals were submitted by a total of four Developers: one proposal from LS Power Grid Corporation I (LS Power), ten proposals from NextEra Energy Transmission New York, Inc. (NextEra), one proposal from Anbaric Development Partners, LLC (Anbaric), and seven proposals from Propel NY (a partnership between the New York Power Authority and New York Transco, LLC).[6]

2.2 Viability and Sufficiency Assessment

The *Viability & Sufficiency Assessment* is a pass/fail test to screen whether each of the 19 proposed projects is capable of satisfying the minimum criteria of the Long Island PPTN. The *Viability & Sufficiency Assessment* found two projects that did not meet the sufficiency criteria—T046 Anbaric Downstate Clean Powerlink and T050 Propel Base Solution 4. The NYISO also determined that one project, T045 NextEra

[4] https://www.nyiso.com/documents/20142/22968753/LI-PPTN-TechConference.pdf/

[5] https://www.nyiso.com/documents/20142/22968753/LIPPTN-FAQ-08112021-rev09202021.pdf/

[6] All of the developers that submitted proposed solutions to the Long Island PPTN were qualified transmission developers in accordance with the Attachment Y of the OATT. *See* https://www.nyiso.com/documents/20142/1395552/List-of-Qualified-Developers-2022-11-02-Final.pdf/

Plus 3, which was found to be viable and sufficient, was not eligible for evaluation and selection because it contained non-transmission facilities and, therefore, was an "Other Public Policy Project." The NYISO presented the *Viability & Sufficiency Assessment Report* to stakeholders and filed it with the PSC on April 4, 2022. The report is included in Appendix A.

2.3 Characterization of New and Upgrade Facilities

In October 2021, the NYISO filed tariff revisions with FERC, pursuant to Section 206 of Federal Power Act, to establish new procedures in the Public Policy Process to implement certain reserved rights of transmission owners to build, own, and recover the cost of upgrades to their existing transmission facilities. The new procedures went into effect on October 12, 2021. In accordance with the new procedures, the NYISO identified Public Policy Transmission Upgrades[7] contained in the proposed projects by posting to its website an initial characterization of project facilities as new or Public Policy Transmission Upgrades. Disputes to the characterization of specific facilities were raised by several parties. After discussing with the disputing parties, the NYISO posted a final list of facility characterizations[8] to its website on June 10, 2022, and is included in Appendix F.

2.4 Project Descriptions

The Developers of all 16 viable and sufficient Public Policy Transmission Projects elected for the NYISO to evaluate the projects for purposes of selection as the more efficient or cost-effective solution to the Long Island PPTN. Below is a brief description of the major facilities of these projects. Appendix E contains a more detailed description and map of each project.

T035 LS Power Atlantic Gateway

- 3 x Barrett – Ruland Rd 345 kV PAR-controlled lines
- 3 x Ruland Rd – Millwood HVDC lines

T036 NextEra Core 1

- East Garden City – Dunwoodie 345 kV PAR-controlled line
- East Garden City – Sprain Brook 345 kV PAR-controlled line
- Ruland Road – Sprain Brook 345 kV line
- East Garden City – Jamaica 138 kV PAR-controlled line

[7] "Public Policy Transmission Upgrades" are defined as a portion of a Public Policy Transmission Project that satisfy the definition of upgrade set forth in Section 31.6.4 of Attachment Y and are eligible for the applicable Transmission Owner to exercise the right to build, own, and recover the costs.

[8] https://www.nyiso.com/documents/20142/31279228/LI_OSW_Export_ESPWG_06-08-2022.pdf/

T037 NextEra Core 2

- East Garden City – Dunwoodie 345 kV line
- East Garden City – Sprain Brook 345 kV line
- Ruland Road – Sprain Brook 345 kV PAR-controlled line
- East Garden City – Jamaica 138 kV PAR-controlled line
- East Garden City – Farragut 345 kV PAR-controlled line

T038 NextEra Core 3

- Northport – Dunwoodie 345 kV line
- East Garden City – Sprain Brook 345 kV PAR-controlled line
- Ruland Road – Sprain Brook 345 kV PAR-controlled line
- East Garden City – Jamaica 138 kV PAR-controlled line
- East Garden City – Farragut 345 kV PAR-controlled line
- Pilgrim – Northport 138 kV line

T039 NextEra Core 4

- Northport – Dunwoodie 345 kV line
- East Garden City – Sprain Brook 345 kV PAR-controlled line
- Ruland Road – Sprain Brook 345 kV line
- East Garden City – Jamaica 138 kV PAR-controlled line
- Sprain Brook – Farragut 345 kV line
- Pilgrim – Northport 138 kV line

T040 NextEra Core 5

- Northport – Dunwoodie 345 kV line
- East Garden City – Sprain Brook 345 kV PAR-controlled line
- Ruland Road – Sprain Brook 345 kV line
- East Garden City – Jamaica 138 kV PAR-controlled line

T041 NextEra Core 6

- Northport – Sprain Brook HVDC line
- East Garden City –Dunwoodie 345 kV PAR-controlled line
- Ruland Road – Sprain Brook 345 kV line
- East Garden City – Jamaica 138 kV PAR-controlled line
- Pilgrim – Northport 138 kV line

T042 NextEra Core 7

- Northport – Sprain Brook HVDC line
- East Garden City – Dunwoodie 345 kV PAR-controlled line
- Ruland Road – Sprain Brook 345 kV line
- East Garden City – Jamaica 138 kV PAR-controlled line
- 2 x HVDC connectors between the NY Bight and Buchanan
- Pilgrim– Northport 138 kV line

T043 NextEra Enhanced 1

- Northport – Sprain Brook HVDC line
- East Garden City – Sprain Brook 345 kV PAR-controlled line
- East Garden City – Dunwoodie 345 kV line
- Ruland Road – Sprain Brook 345 kV PAR-controlled line
- East Garden City – Jamaica 138 kV PAR-controlled line
- Sprain Brook – Farragut – East Garden City 345 kV line (PAR controlled at East Garden City towards Farragut)
- Barrett – Buchanan HVDC line
- Pilgrim – Northport 138 kV line

T044 NextEra Enhanced 2

- Northport – Sprain Brook HVDC line
- East Garden City – Sprain Brook 345 kV PAR-controlled line
- East Garden City – Dunwoodie 345 kV line
- Ruland Road – Sprain Brook 345 kV PAR-controlled line
- East Garden City – Jamaica 138 kV PAR-controlled line
- Sprain Brook – Farragut – East Garden City 345 kV line (PAR controlled at East Garden City towards Farragut)
- 2 x HVDC connectors between the NY Bight and Buchanan
- Buchanan – Ramapo 345 kV line
- Jamaica – Corona 138 kV line
- Pilgrim – Holbrook 138 kV line
- Pilgrim – Northport 138 kV line

T047 Propel Base Solution 1

- East Garden City – Tremont 345 kV PAR-controlled line
- Shore Rd – Sprain Brook 345 kV PAR-controlled line
- Barrett – East Garden City 345 kV PAR-controlled line
- Ruland Rd – Shore Rd 345 kV line
- Ruland Rd – East Garden City 345 kV PAR-controlled line
- Shore Rd – East Garden City 345 kV line

T048 Propel Base Solution 2

- Barrett – Tremont 345 kV PAR-controlled line
- Ruland Rd – Sprain Brook Rd 345 kV PAR-controlled line
- Syosset – Shore Road 138 kV PAR-controlled line

T049 Propel Base Solution 3

- East Garden City – Tremont 345 kV PAR-controlled line
- Shore Rd – Sprain Brook 345 kV PAR-controlled line
- 2 x Barrett – East Garden City 345 kV PAR-controlled lines
- Ruland Rd – Shore Rd 345 kV line
- Ruland Rd – East Garden City 345 kV PAR-controlled line
- Shore Rd – East Garden City 345 kV line
- Shore Rd – East Garden City 138 kV line

T051 Propel Alternate Solution 5

- East Garden City – Tremont 345 kV PAR-controlled line
- 2 x Shore Rd – Sprain Brook 345 kV PAR-controlled lines
- Barrett – East Garden City 345 kV PAR-controlled line
- Ruland Rd – Shore Rd 345 kV line
- Ruland Rd – East Garden City 345 kV PAR-controlled line
- Shore Rd – East Garden City 345 kV line
- Syosset – Shore Road 138 kV PAR-controlled line

T052 Propel Alternate Solution 6

- Eastern Queens – Dunwoodie 345 kV PAR-controlled line
- East Garden City – Tremont 345 kV PAR-controlled line
- 2 x Shore Rd – Sprain Brook 345 kV PAR-controlled lines
- 2 x East Garden City – Eastern Queens 345 kV line
- Barrett – East Garden City 345 kV PAR-controlled line
- Ruland Rd – Shore Rd 345 kV line
- Ruland Rd – East Garden City 345 kV PAR-controlled line
- Shore Rd – East Garden City 345 kV line
- Syosset – Shore Road 138 kV PAR-controlled line

T053 Propel Alternate Solution 7

- Eastern Queens – Dunwoodie 345 kV PAR-controlled line
- Eastern Queens – Tremont 345 kV line
- Ruland Rd – Sprain Brook 345 kV PAR controlled line
- Northport – Sprain Brook HVDC line
- 3 x Barrett – Eastern Queens 345 kV lines (one is PAR-controlled)
- Syosset – Shore Road 138 kV PAR controlled line

3. Project Evaluations

The process for the evaluation of proposed solutions is described in the NYISO Public Policy Transmission Planning Process Manual and is based on the metrics set forth in the NYISO's tariff and, to the extent feasible, the criteria prescribed by the PSC. The NYISO's evaluation of Public Policy Transmission Projects differs from its evaluation of projects in its other planning processes because it can give varying levels of considerations to the baseline and chosen scenarios based upon the nature of the proposed Public Policy Transmission Need. In other words, certain projects may perform differently under normal operating conditions and other potential operating conditions. Based upon the particulars of the Public Policy Transmission Need, the more efficient or cost-effective solution may be chosen based upon a scenario or a combination of scenarios.

For the purposes of the evaluation and selection of the more efficient or cost-effective Public Policy Transmission Project(s) to address the Long Island PPTN, the following criteria and metrics were applied as defined in Section 31.4.8 of Attachment Y to the NYISO Open Access Transmission Tariff (OATT). The criteria prescribed in the PSC Order for the Long Island PPTN have been addressed throughout the metrics, as detailed below.

Figure 2: Criteria and Metrics for Long Island PPTN

Metric	Tariff-Based Metric	Specific Metric in PSC Order	Analysis Performed
Capital Costs Estimates, including quantitative assessment of Cost Caps	X		SECO estimated equipment, construction, and permitting costs. SECO's estimate is compared to Developer's Cost Cap.
Qualitative Evaluation of Cost Caps	X		NYISO consideration of Cost Cap effectiveness in protecting ratepayers
Cost per MW Ratio	X		Compare project cost to various transfer capability increases
Expandability	X		Electrical (additional offshore wind beyond 3000 MW) and Physical Expandability (new points of interconnection)
Operability (e.g., additional flexibility in operating the system and costs of operating the systems)	X		Power flow analysis of flexibility to operate the system under outage conditions
Performance (i.e., interface flows, percent loading of facilities)	X		Transmission utilization through Long Island interfaces, unbottled offshore wind generation
Property rights and routing	X		SECO review of project proposals
Potential of delays in constructing the project, including obtaining permits and certifications	X		SECO review of project proposals
Reliability of the System	X*	X	

➢ **Transmission Security (thermal, voltage, and stability) under normal and emergency operating conditions**	X	X	Transmission security analysis is included in all interconnection studies, which are performed in parallel with the Public Policy Process.
Other Metrics Identified through Stakeholder Process	X		
➢ **Changes in Locational-Based Marginal Prices**	X	X	LBMPs are a product of production cost simulations. LBMPs provide directional understanding of the system behavior, but are less informative than other economic metrics for this PPTN.
➢ **Changes in Transmission Losses**	X	X	Losses are a product of production cost simulations. Impacts to transmission losses are not significant.
➢ **Changes in Installed Capacity costs**	X	X	Capacity Benefit analysis
➢ **Changes in Transmission Congestion Contract Revenues**	X	X	Congestion is a product of production cost simulations. TCC impacts are less informative than other economic metrics for this PPTN.
➢ **Changes in Production Costs**	X	X	Production Cost Simulations
➢ **Changes in Emissions**	X	X	Emissions are a product of production cost simulations. For a future with little to no fossil generation, the impact to emissions is not significant.
➢ **Changes in Transmission Congestion**	X	X	Congestion is a product of production cost simulations.
➢ **Impacts on Transfer Limits**	X	X	Transfer limit analysis is also incorporated into Cost per MW and Operability
➢ **Changes in Resource Deliverability**	X	X	Energy production of offshore wind is a product of production cost simulations.

* Reliability of the transmission system is also evaluated under the Viability & Sufficiency Assessment as prescribed by Section 31.4.5 of the Attachment Y to the OATT.

3.1 Evaluation Scenarios

For the purpose of the Long Island PPTN, the NYISO established three scenarios to evaluate the proposed solutions:

- **Baseline Scenario**: evaluates the system condition with 9,000 MW total of offshore wind generation (6,000 MW in New York City and 3,000 MW in Long Island), moderate buildout of upstate renewables, and expected generation retirements. This scenario assumes transmission upgrades on the Barrett – Valley Stream 138 kV paths to alleviate congestion.
- **Policy Scenario**: evaluates the system condition with 12,000 MW total of offshore wind generation (6,000 MW in New York City and 6,000 MW in Long Island), upstate renewable buildout, and fossil generation retirements and to meet CLCPA policy mandates. This scenario assumes transmission upgrades on the Barrett – Valley Stream 138 kV paths to alleviate congestion.
- **Policy + Barrett – Valley Stream Constraint Scenario** (Policy + B-VS Scenario): evaluates the system condition built upon the Policy Scenario and excludes the assumed upgrades on the Barrett – Valley Stream 138 kV paths. The Barrett-Valley Stream path could be one of the most congested paths in the New York Control Area when interconnecting offshore wind projects, such as Empire Wind II, without

applicable transmission upgrades. Empire Wind II is proposed to interconnect to Barrett – Valley Stream 138 kV line and causes congestion on the 138 kV lines in the vicinity, including Barrett-Valley Stream, Barrett-Freeport and East Garden City – Valley Stream. In the first quarter of 2023, Empire Wind II accepted its cost allocation for local System Upgrade Facilities but rejected its cost allocation for System Deliverability Upgrades in Class Year 2021. The limited upgrades Empire Wind II accepted in the Interconnection Process left the nearby transmission constraints unresolved. The NYISO, therefore, established the Policy + B-VS Scenario to assess the impact that the proposed projects may have on the system.

The evaluation of the proposed solutions utilized tools such as power flow, resource adequacy, and production cost simulations. The NYISO performed additional sensitivities to the above-identified scenarios to further distinguish between the proposed solutions. The details of the databases are described in Appendix G.

3.2 Capital Cost Estimates and Cost Cap

Evaluation Metric: Capital Cost Estimates and Cost Cap

Purpose: Considers the project cost estimates and the Developer's voluntary Cost Cap

Evaluation: SECO independent cost estimate and qualitative assessment of Cost Caps

Considerations:

- The total cost estimate takes into consideration the independent cost estimate relative to the cost containment structure proposed by each developer.
- Further qualitative evaluation considers the effectiveness of the Cost Caps and their impact on project constructability.

Capital Cost Estimates

In its proposal, a Developer is required to submit credible capital cost estimates for the project. The capital cost estimates must include costs for (1) the proposed project (separately identifying new transmission facilities and Public Policy Transmission Upgrades) and (2) Network Upgrade Facilities, System Upgrade Facilities, System Deliverability Upgrades, Network Upgrades, and Distribution Upgrades, as applicable. A number of the selection metrics evaluate or are impacted by the proposed project's estimated cost. These metrics include the capital costs estimates for the project that take into account: the accuracy of the proposed estimate, the cost per MW ratio of the proposed project; additional metrics that may be proposed by the PSC, and other metrics that the NYISO may consider in consultation with its

stakeholders (e.g., changes in production costs).

In performing the evaluation of the capital cost estimates, the NYISO engaged independent consultants to review the project information submitted by a Developer, including its project cost estimate, and relied on the independent consultants' analyses and estimates in evaluating projects' performance under each metric.

Developer Cost Containment Proposals

A Developer may voluntarily submit a Cost Cap with its proposed project that covers its Included Capital Costs, but not its Excluded Capital Costs.

Under the tariff, a Cost Cap is a Developer's binding commitment to contain certain categories of capital costs—defined as "Included Capital Costs"—for a proposed Public Policy Transmission Project.

Included Capital Costs contain all of the capital costs necessary to design, construct, and place a facility into service with the exception of Excluded Capital Costs. The categories of Included Capital Cost include: contract work, labor, materials and supplies, transportation, special machine services, shop services, protection, injuries and damages, privileges and permits, engineering services, the cost of conducting an environmental site assessment or investigation, as well as reasonably foreseeable environmental site remediation and environmental mitigation costs, general administration services, legal services, real estate and land rights, rents, studies, training, asset retirement, and taxes. In addition, a Developer may choose to include, as Included Capital Costs, real estate costs for existing rights-of-way that are a part of the proposed project but are not owned by the Developer.

Excluded Capital Costs include:

1. Capital costs of Public Policy Transmission Upgrades,
2. Capital costs of upgrade facilities determined by the NYISO in one of its transmission expansion or interconnection processes,
3. Debt costs, allowance for funds used during construction and other representations of the cost of financing the transmission project during the construction timeframe. That may be included as part of the capital cost of the project when it enters into services or as otherwise determined by the Commission,[9]
4. Unforeseeable environmental remediation and environmental mitigation costs, and

[9] As a part of the evaluation, the NYISO did not estimate or evaluate a developer's return on equity, financing costs, or incentives such as construction work in progress (CWIP) payments.

5. Real estate costs for existing rights-of-way that are part of the proposed Public Policy Transmission Project but are not owned by the Developer, that the Developer chooses not to include as Included Capital Costs in its proposal.

These Excluded Capital Costs are types of costs that cannot reasonably be estimated or foreseen by Developers within the 60-day project proposal window with sufficient certainty to subject the costs to the Cost Cap. The NYISO uses independent cost estimates developed by its consultants for the Excluded Capital Costs in its evaluation.

A Developer may submit a Cost Cap either in the form of a hard Cost Cap or a soft Cost Cap. The tariff characterizes the Cost Caps as follows:

- **Hard Cost Cap** is a dollar amount for those costs above which the Developer will not be eligible to recover from ratepayers its actual costs for the Included Capital Costs that exceed the capped amount.
- **Soft Cost Cap** is a dollar amount for those costs above which the Included Capital Costs are shared between the Developer and ratepayers, based on a Developer-proposed percentage. The share of costs above the cap borne by the Developer must be greater than or equal to 20% (leaving 80% of costs in excess of the cap to consumers).

Quantitative Review of Cost Caps

A Developer's voluntary Cost Cap plays directly into the NYISO's calculation of the total cost estimates for each project and its subsequent quantitative evaluation thereof. The calculation of the total cost estimate depends on whether a Developer submits a Cost Cap and the nature of a submitted Cost Cap. For instance, if a Developer elected not to submit a voluntary Cost Cap, the NYISO would rely only on the estimate of its independent consultant to calculate the Included Capital Costs for that project. However, if a Developer submits a Cost Cap, the tariff defines the treatment of the Cost Cap based on whether it is a hard or soft Cost Cap.

The calculation of Included Capital Costs for a hard Cost Cap requires the NYISO to take the submitted Cost Cap "as is" and use the capped amount as the amount for Included Capital Costs.

The calculation of Included Capital Costs for a soft Cost Cap proposal depends on whether the capped amount is above or below the independent cost estimate prepared by the NYISO's consultants:

1. Developer's Soft Cost Cap is above the Independent Cost Estimate

In this case, the NYISO's tariff prescribes the use of the soft Cost Cap as the amount for the Included Capital Costs. In such case, it is reasonable to use the Developer's own cost estimate because, as a matter of policy design, Developers should have an incentive to beat the independent cost estimate by bidding

below what they expect will be the independent estimate for its project. If a Developer that bids above the independent estimate were to benefit from the lower independent estimate in project evaluation, then that would provide the wrong incentive to Developers as they develop their submissions. In the event that a Developer does bid above the independent estimate, it is either because there is an aspect of its project that is unusual and the Developer knows best what its costs will be, or because the Developer elects not to accept much cost risk with its project.

2. Developer's Soft Cost Cap is below the Independent Cost Estimate.

As a soft Cost Cap exposes ratepayers to some percentage of costs in excess of the Cost Cap, the NYISO does not simply use the proposed Cost Cap as the anticipated value of Included Capital Costs. Instead, the NYISO calculates an adjusted value of the Included Capital Cost that is based upon the level of ratepayer exposure to cost overruns. Specifically, the NYISO will (1) multiply the difference between (a) the independent consultant's cost estimate for Included Capital Costs and (b) the Developer's Included Capital Costs, by (c) the risk percentage assumed by ratepayers and (2) add that amount to the Developer's Included Capital Costs.

All Developers submitted voluntary Cost Caps in their proposals for the Long Island PPTN. LS Power submitted a hard Cost Cap for T035, while NextEra and Propel NY submitted a range of different soft Cost Caps for their respective projects. Figure 3 below summarizes the independent estimate of the capital cost, which includes the Included Capital Costs and Excluded Capital Costs. The "Total Cost Estimate" shown in the figure below and used throughout the report takes the Developer's Cost Cap into consideration, as detailed above.

Figure 3: Independent Estimate and Voluntary Cost Cap

Project	Cost Cap	Developer Cost Cap ($M)	Independent Estimate of Included Capital Costs ($M)	Independent Estimate of Excluded Capital Costs ($M)	Total Cost Estimates* ($M)
T035 – LS Power	Hard Cap	$3,074	$5,920	$78	$3,152
T036 – NextEra Core 1	50/50 Soft	$5,882	$3,230	$1,137	$7,019
T037 – NextEra Core 2	50/50 Soft	$6,867	$3,627	$1,259	$8,126
T038 – NextEra Core 3	50/50 Soft	$7,444	$4,252	$1,209	$8,653
T039 – NextEra Core 4	50/50 Soft	$7,211	$4,457	$1,272	$8,483
T040 – NextEra Core 5	50/50 Soft	$5,898	$3,610	$1,086	$6,984
T041 – NextEra Core 6	50/50 Soft	$6,774	$4,448	$1,138	$7,912
T042 – NextEra Core 7	50/50 Soft	$10,373	$13,750	$1,131	$13,193

Project	Cost Cap	Developer Cost Cap ($M)	Independent Estimate of Included Capital Costs ($M)	Independent Estimate of Excluded Capital Costs ($M)	Total Cost Estimates* ($M)
T043 – NextEra Enh 1	50/50 Soft	$11,471	$8,753	$1,298	$12,769
T044 – NextEra Enh 2	50/50 Soft	$14,991	$16,128	$1,338	$16,898
T047 – Propel Base 1	20/80 Soft	$1,877	$2,269	$289	$2,480
T048 – Propel Base 2	20/80 Soft	$1,687	$1,966	$211	$2,121
T049 – Propel Base 3	20/80 Soft	$2,131	$2,642	$295	$2,835
T051 – Propel Alt 5	20/80 Soft	$2,554	$2,902	$430	$3,262
T052 – Propel Alt 6	20/80 Soft	$3,953	$4,071	$658	$4,705
T053 – Propel Alt 7	20/80 Soft	$5,118	$5,113	$458	$5,576

* In calculating the total cost estimate in this table, the NYISO, consistent with the OATT, did not estimate or add to the Excluded Capital Costs of any costs concerning unforeseeable environmental mitigation or remediation costs or the financing of the proposed project, such as debt costs or allowance for funds used during construction.

Qualitative Evaluation of Cost Caps

To address the potential scenarios where the quantitative evaluation may not fully capture the benefit or risks of a Developer's Cost Cap, the NYISO's evaluation also includes qualitative criteria for assessing proposed Cost Caps.

Criterion I (Cost Containment Incentive) assesses "[t]he effectiveness of the proposed Cost Cap in providing an incentive to the Developers to contain their Included Capital Costs." It assesses how well aligned is the Developer's incentive to maximize its profits by avoiding cost overruns compared to the level of risk exposure to consumers and what degree of risk is the Developer assuming to pay for cost overruns. This criterion is closely connected with the percentage of the proposed Cost Cap, but the effectiveness of a proposed Cost Cap can become decoupled from the cost sharing percentage if there is a sufficient "buffer" or gap between the independent cost estimate and the Developer's submitted amount for the Cost Cap. A Cost Cap that pressures the Developer to keep costs down is considered to have a profit motive well aligned with consumer interest.

Criterion II (Consumer Risk, Exposure & Uncertainty) assesses "[t]he effectiveness of the proposed Cost Cap in protecting ratepayers from Included Capital Cost overruns." This criterion assesses the likelihood and magnitude of identified project risks and how effective the Cost Cap is at protecting consumers from those overruns. Unlike in the Criterion I, having a comfortable buffer between the Developer's submitted amount for the Cost Cap and the independent cost estimates can help to alleviate concerns associated with identified project risks by ensuring adequate funding to overcome risks

associated with the development and construction of the proposed project.

Criterion III (Expected Costs vs. Developer's Cap) assesses "[t]he magnitude of the difference between the Cost Cap and the independent cost estimate." Although this criterion plays heavily into the analysis of the prior two criteria, there are additional considerations considered here for submitted Cost Caps. Specifically, Criterion III looks at the Cost Cap depending on whether the amount of the Cost Cap is above or below the independent cost estimate. If a proposed Cost Cap is below the independent cost estimate, this assessment considers how close, or far below, is the proposed Cost Cap amount to the independent cost estimate considering (a) the Developer's financial and technical qualifications to construct the project and (b) the likelihood that the project can be constructed at the Cost Cap amount. For instance, if there is a large mismatch between the Cost Cap amount and the independent cost estimate, the NYISO assessed the potential "risk of project abandonment" due to a project developing into a financial loss. The NYISO also considered rationales supporting the lower amount of the Included Capital Costs underlying the Cost Cap and the likelihood that the Included Capital Costs will be less than the independent cost estimates based on those reasons.

Conversely, if a proposed Cost Cap is above the independent cost estimate, this criterion assesses whether the proposed Cost Cap will meaningfully contain Included Capital Costs at all. Specifically, the NYISO assesses (a) how close, or far above, is the proposed Cost Cap amount to the independent cost estimate and whether the amount of the Cost Cap that is above the independent cost estimate is either so significant that it is unlikely to bind the Developer and provide benefit to ratepayers or so small that it can still protect ratepayers from cost overruns.

In performing this qualitative evaluation, the NYISO considered the level at which the submitted Cost Caps satisfies the criteria together with the construction risks identified for the corresponding project. Projects with higher construction risks have a greater probability of developing at higher costs (e.g., T036 and T040). In some cases, the NYISO conducted further examination under Criterion III of potential additional costs to consumers stemming from additional information on the rationale for the level of the Cost Cap amount discovered during the evaluation.

The following details each Developer's submitted Cost Caps for their submitted project or projects.

LS Power Submitted Cost Cap Proposal

- LS Power proposed a $3.074B hard Cost Cap for T036.
- The NYISO's consultant, SECO, estimated the Included Capital Costs of the project to be approximately $5.92B.

- The independent cost estimate of Included Capital Costs and LS Power's proposed Cost Cap amount differ substantially.

Criterion I: (Cost Containment Incentive)
Considering the hard Cost Cap and an independent cost estimate much higher than the amount of the Cost Cap, LS Power will experience considerable pressure to keep project costs low enough so as to achieve its targeted returns for its investors. Profit motive and consumer interest are well aligned.

Criterion II: (Consumer Risk, Exposure & Uncertainty)
LS Power's submitted Cost Cap amount comes in well below the independent cost estimate. The potential for the project's Included Capital Costs to exceed the hard Cost Cap is high relative to the other proposed projects. Nevertheless, LS Power's proposed hard Cost Cap eliminates consumer exposure in the event of that the Included Capital Costs exceed the Cost Cap amount.

Criterion III: (Expected Costs vs. Developer's Cap)
The magnitude of the discrepancy between LS Power's amount of the Cost Cap (i.e., Included Capital Costs) and the independent cost estimate is concerning.

NextEra Submitted Cost Cap Proposals

- NextEra proposes a 50/50 soft Cost Cap for all of its projects.
- The amount of NextEra's Cost Cap for its projects were generally several billion higher than the independent cost estimates for the Included Capital Costs.
- The independent cost estimates for the Excluded Capital Costs for each of the NextEra projects ranged from $1.1B to $1.3B.

Criterion I: (Cost Containment Incentive)
The significantly higher amount of the Cost Cap in comparison to the independent cost estimate for Included Capital Costs seriously calls into question the effective of the Cost Cap to incentivize NextEra to contain its costs. NextEra's profit motive is not aligned with consumer interest for the several billion dollars of Included Capital Costs that exceed the independent cost estimates. As a result, NextEra's incentive to maximize profits would not compel it to develop its projects at a cost that is less than the Cost Cap amount.

Criterion II: (Risk, Exposure & Uncertainty)
NextEra's proposed 50/50 cost sharing does insulate consumers from a significant amount of cost overruns but only in the unlikely event that the Included Capital Costs exceed the billions of margin. In other words, if actual Included Capital Costs for the project are more in line with the independent cost estimate, then consumers will be responsible for all of those costs up until the Cost Cap and fifty percent of the Included Capital Costs that may exceed the Cost Cap as well.

Criterion III: (Expected Costs vs. Developer's Cap)
Some margin above the projected Included Capital Costs is to be expected in a proposed Cost Cap.

The magnitude of the amount that is contained in NextEra's proposal is concerning.

Propel NY Submitted Cost Cap Proposals

- Propel NY proposes a 20/80 soft Cost Cap for its projects—the minimum amount permitted under the tariff.
- The amount of Propel NY's Cost Cap for its projects were $0.1B to $0.5B lower than the independent cost estimate for Included Capital Costs.
- The independent cost estimates for the Excluded Capital Costs for each of the Propel NY projects ranged from just over $0.2B to $0.6B.

Criterion I: (Cost Containment Incentive)
Propel NY's proposed 20/80 cost sharing is the minimum amount allowed under the tariff. The reason for this minimum is that anything below 20% cost sharing for a Developer is unlikely to be enough of a burden on the Developer to counterbalance a FERC-approved rate of return on equity. While it cannot be known definitively until after the Developer's rate is approved by FERC, Propel NY's proposal to assume 20% of the Included Capital Costs above the contained amount is less favorable than the proposed sharing commitments by other Developers and may leave Propel NY to lack an effective profit motive to contain costs.

Criterion II: (Risk, Exposure & Uncertainty)
Under Propel NY's submitted soft Cost Caps, consumers would be responsible for 80% of Included Capital Cost overruns. This means that Propel NY would be able to recover the majority of any overruns through its FERC-approved rate. As a result, Included Capital Cost overruns are more likely with Propel NY's projects than with the other two Developers given the lack of an effective profit motive. However, given the overall proposed Included Capital Costs of T047, T048, and T049, the risks to consumers of overruns are not as significant as T051, T052, and T053.

Criterion III: (Expected Costs vs. Developer's Cap)
Propel NY's proposed Cost Cap amount is 15-20% lower than the independent cost estimate of Included Capital Costs and provides a realistic margin that would encourage a motivated Developer to identify efficiency improvements and cost savings in order to ensure the Included Capital Costs for the project come in under the Cost Cap amount.

Figure 4: Qualitative Cost Cap Comparison

Project	Developer Cost Cap Share (%)	Qualitative Criteria I	Qualitative Criteria II	Qualitative Criteria III
T035 - LSPower	100	Excellent	Good	Poor
T036 - NextEra Core 1	50	Fair	Fair	Poor
T037 - NextEra Core 2	50	Fair	Fair	Poor
T038 - NextEra Core 3	50	Fair	Fair	Poor
T039 - NextEra Core 4	50	Fair	Fair	Poor
T040 - NextEra Core 5	50	Fair	Fair	Poor
T041 - NextEra Core 6	50	Fair	Fair	Poor
T042 - NextEra Core 7	50	Fair	Good	Fair
T043 - NextEra Enh 1	50	Fair	Fair	Poor
T044 - NextEra Enh 2	50	Fair	Fair	Good
T047 - Propel Base 1	20	Poor	Fair	Excellent
T048 - Propel Base 2	20	Poor	Fair	Excellent
T049 - Propel Base 3	20	Poor	Fair	Good
T051 - Propel Alt 5	20	Poor	Poor	Excellent
T052 - Propel Alt 6	20	Poor	Poor	Good
T053 - Propel Alt 7	20	Poor	Poor	Good

Key Findings

- ✓ **The project cost estimates range from $2.1B to $16.9B**. This wide-ranging total cost estimates result from the combination of project designs and Cost Caps.
- ✓ **LS Power's hard Cost Cap proposal provides significant protection to consumers; however, such protection is somewhat offset by the risks associated with the significant difference between the amount of the Cost Cap and the independent cost estimate for its project.**
- ✓ **NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultants estimates for its projects.**
- ✓ **Propel NY's proposed 20/80 Cost Cap provides the minimum protection to consumers under the tariff. Generally, the lower protections from the 20/80 Cost Cap are mitigated by the lower estimated cost of Propel NY's projects and, therefore, pose a lower proportional risk to consumers in the event of overruns compared to other more expensive projects.**

3.3 Transfer Capability & Cost Per MW Ratios

Evaluation Metric: Transfer Capability & Cost Per MW Ratios

Purpose: Determines the cost per MW ratio by dividing the Total Cost Estimate by the MW value of increased transfer capability

Evaluation: Compare the electrical benefits due to the projects, such as increased transfer limits, flexibility during outage conditions, and expandability, to the total cost estimates.

Considerations:

I. Lower cost per MW is better when comparing projects' benefit/cost ratios. Note that there are no established thresholds for this metric.

The NYISO calculates the cost per MW ratio metric by dividing each project's Total Cost Estimate[10] by the following three different MW values to help inform how efficiently each project meets the Long Island PPTN:

- Increase in normal transfer limit of the Long Island export interface. See Appendix I for more details.
- Increase in offshore wind (OSW) energy integration under light load N-1-1 system conditions. See the Expandability metric for more details.
- Double outage operability range. See the metric for more details.

The results are shown in Figure 5 and Figure 6, with highest performing projects having low $/MW across all transfer, expandability, and operating range values.

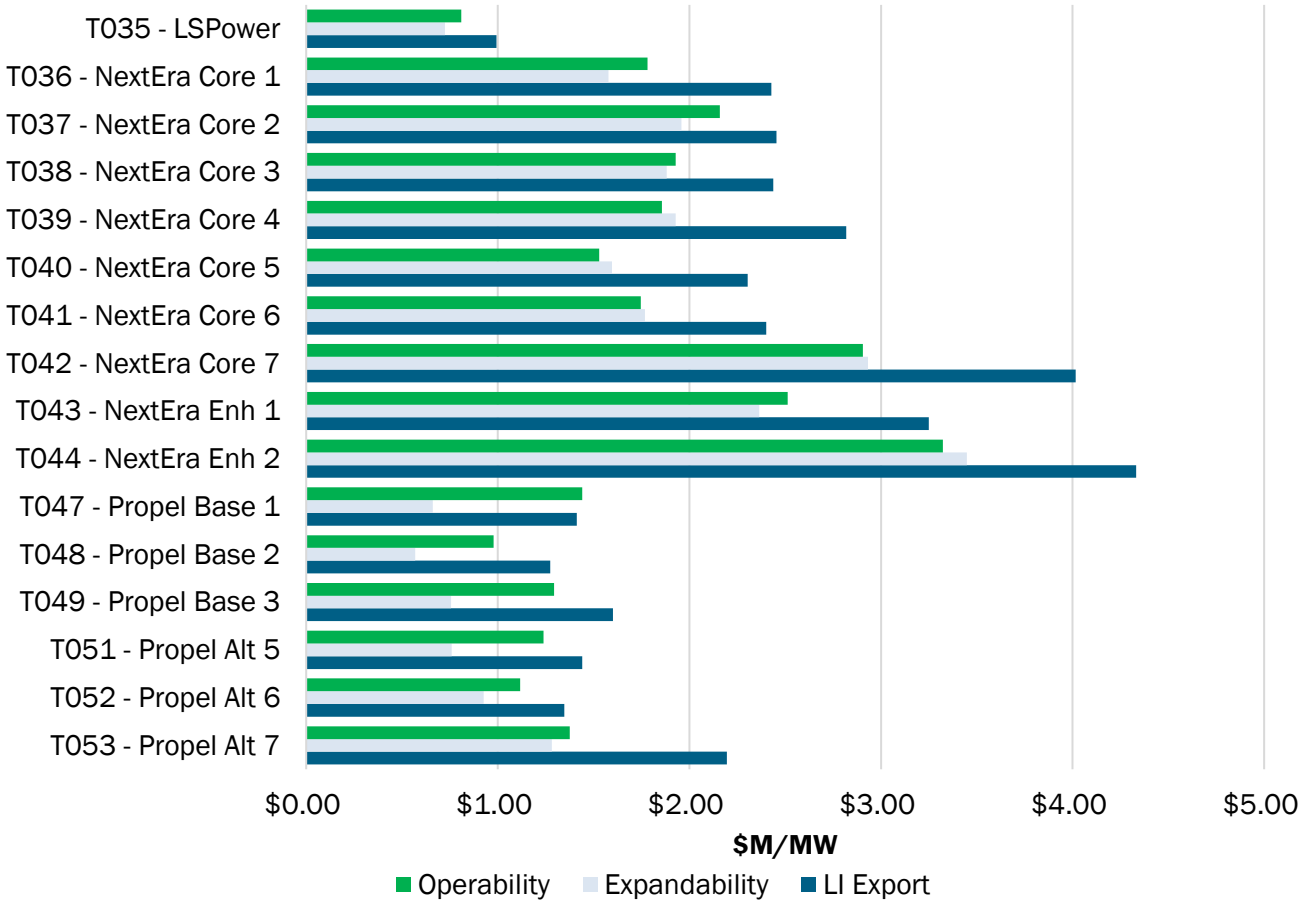
Figure 5: Transfer Capability & Cost Per MW Ratios

Project	LI Export Increase (MW)	$M/MW	OSW Expandability (MW)	$M/MW	Second Outage Operating Range (MW)	$M/MW
T035 – LS Power	3,175	$0.99	4,350	$0.72	3,895	$0.81
T036 – NextEra Core 1	2,890	$2.43	4,450	$1.58	3,940	$1.78
T037 – NextEra Core 2	3,310	$2.45	4,150	$1.96	4,260	$1.91
T038 – NextEra Core 3	3,550	$2.44	4,600	$1.88	5,420	$1.60
T039 – NextEra Core 4	3,010	$2.82	4,400	$1.93	4,570	$1.86
T040 – NextEra Core 5	3,030	$2.30	4,375	$1.60	4,565	$1.53
T041 – NextEra Core 6	3,295	$2.40	4,475	$1.77	4,530	$1.75
T042 – NextEra Core 7	3,285	$4.02	4,500	$2.93	4,540	$2.91
T043 – NextEra Enh 1	3,930	$3.25	5,400	$2.36	5,790	$2.21
T044 – NextEra Enh 2	3,900	$4.33	4,900	$3.45	5,740	$2.94

[10] The cost per MW metric uses the Total Cost Estimate described in Section 4.1 of this report, as opposed to SECO's independent cost estimate. Consideration of the difference between the Developer's Cost Cap and SECO's independent cost estimate of Included Capital Costs is considered in the cost containment metric.

T047 – Propel Base 1	1,755	$1.41	3,750	$0.66	2,260	$1.10
T048 – Propel Base 2	1,665	$1.27	3,725	$0.57	2,170	$0.98
T049 – Propel Base 3	1,770	$1.60	3,750	$0.76	2,270	$1.25
T051 – Propel Alt 5	2,265	$1.44	4,300	$0.76	3,510	$0.93
T052 – Propel Alt 6	3,490	$1.35	5,075	$0.93	5,215	$0.90
T053 – Propel Alt 7	2,540	$2.20	4,350	$1.28	4,055	$1.38

Figure 6: Cost Per MW Ratios



Key Findings

- ✓ **The transfer capability of each proposal was evaluated using three different methods to offer a more holistic view.** In general, proposals with fewer facilities that expand the system, such as T047 Propel Base 1 and T048 Propel Base 2, offer less transfer capability.

- ✓ **T035 LS Power, T048 Propel Base 2, T049 Propel Base 3, and T051 Propel Alt 5 were among the lowest cost per MW across all three values.**

3.4 Expandability

Evaluation Metric: Expandability

Purpose: Considers the impact of the proposed project on future system expansion

Evaluation: Substation layout review, power flow analysis

Considerations:

- Physical expandability – more new points of interconnection (POIs) proposed by the Developers
- Electrical expandability – greater ability to accommodate future generation

The expandability metric assesses each project's ability to accommodate future offshore wind and consists of two separate, but related, assessments—physical expandability and electrical expandability.

Physical expandability evaluates the number of potential POIs for future offshore wind facilities proposed by a project once the project is complete or in the future based on additional modifications to the transmission facilities. Open breaker positions with major equipment included in the proposal (e.g., breaker and buswork) are considered to be "Proposed POI". Open positions that may be created by the installation of breakers in the future (e.g., breakers indicated as future builds in the proposal) are considered to be "Expandable POIs." Figure 7 summarizes the POIs proposed by each project.

The electrical expandability analysis assesses the ability of each project to integrate more than the minimum 3,000 MW of offshore wind interconnected to Long Island. The assessment performs N-0, N-1, and N-1-1 analysis for the Policy Scenario based on the assumption that up to 6,000 MW of offshore wind may be interconnected to Long Island.

Figure 8 shows the maximum amount of offshore wind interconnected to Long Island (up to 6,000 MW) that can be accommodated by each project without curtailment under N-1-1 conditions. Furthermore, the analysis finds that projects marked with an asterisk (*) could deliver more offshore wind capacity than shown in the Figure 8 by redistributing offshore wind interconnections to different POIs. Appendix J details the physical and electrical expandability, respectively.

Figure 7: Physical Expandability

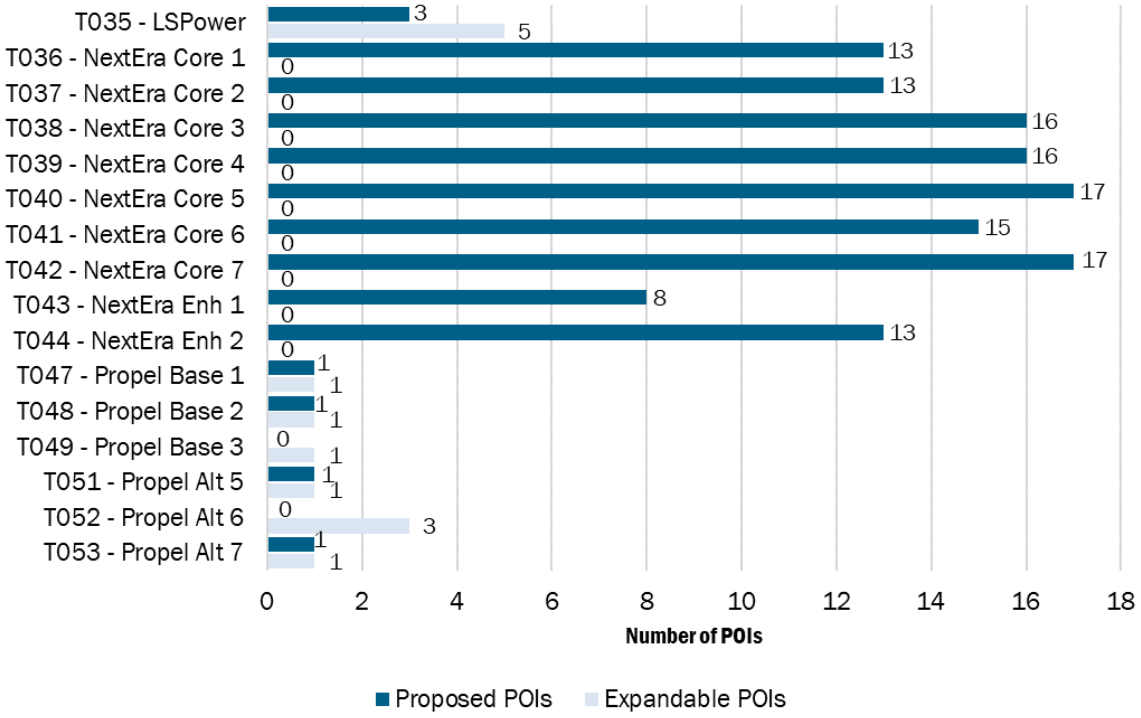
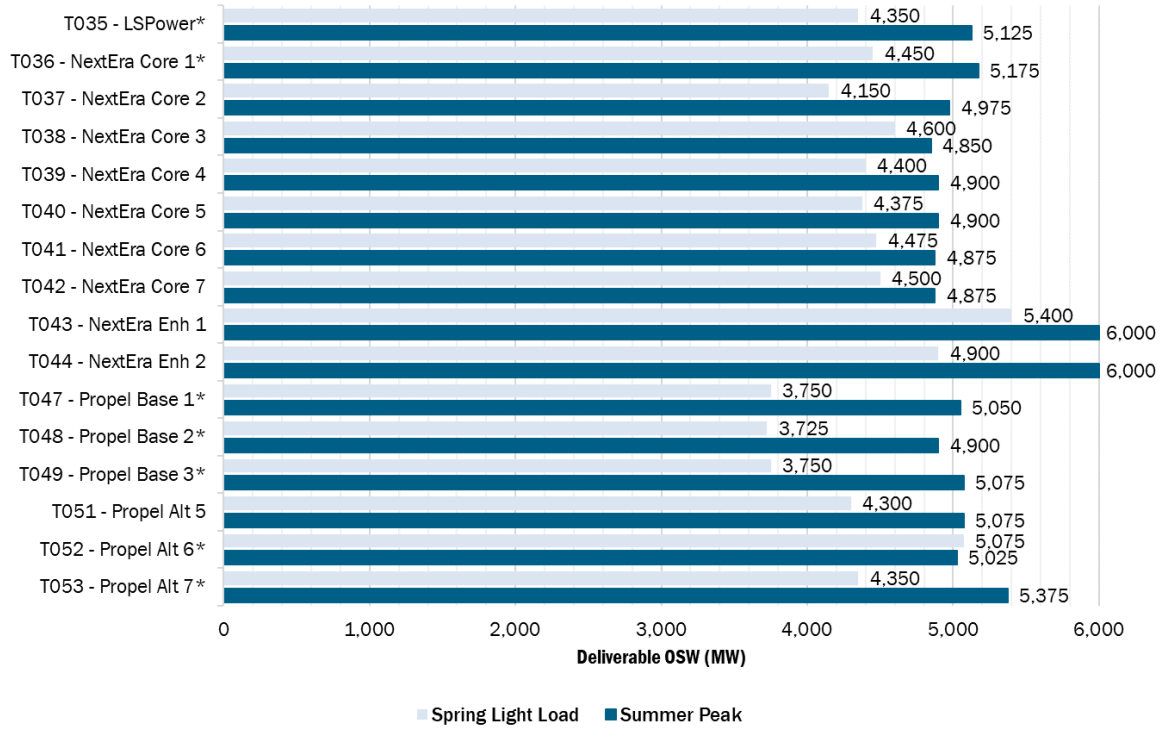


Figure 8: Electrical Expandability



Key Findings

- ✓ **The NextEra projects propose the greatest number of new POIs for future offshore wind facility connections at a diverse set of substation locations.** T042 and T044 provide an additional benefit by building two 122-mile 1200 MW HVDC connections from offshore platforms in the Hudson South Lease area up the Hudson River to the proposed Buchanan substation.

- ✓ **All projects can reliability connect more than 3,000 MW of offshore wind generation to Long Island, with T043 NextEra Enhanced 1 and T052 Propel NY Alternate 6 accommodating the most offshore wind generation under light load conditions.**

3.5 Operability & Resiliency

Evaluation Metric: Operability & Resiliency

Purpose: Considers how the proposed projects would provide additional transfer capability and operating flexibility or the studied future grid conditions

Evaluation: Transfer capability analysis under outage conditions, physical substation layout resiliency review, short circuit analysis to determine electrical system strength, and operating flexibility with expected high levels of offshore wind resources

Considerations:

- Wider range of transfer capability under outage conditions, ability to respond to offshore wind resource output variability, less disruption due to extreme weather, higher grid strength

The NYISO evaluates the operability and resiliency of the proposed projects based on some key metrics that consider how each of the projects compare when integrated into the network. The metrics consider flexibility under facility outage conditions and physical substation resiliency. In addition, the metrics look at some potential likely conditions of a future grid including electrical system strength and operating flexibility with high levels of offshore wind resources connected to Long Island.

3.5.1 Flexibility Under Transmission Facility Outage Conditions

Transmission facility outages occur in normal operating conditions. This operability analysis focuses on the transfer limits under transmission facility outage conditions to evaluate the flexibility of each project. These maintenance condition transfer limits were determined using optimal transfers to represent the NYISO's energy market scheduling systems used by NYISO Operations.

The Policy and Policy + B-VS Scenarios were analyzed with the same methodology for a subset of projects.

When reviewing these transfer limits, a larger range of transfer Import and Export limits is preferable as this gives the NYISO more operational flexibility under transmission outage conditions.

Figure 9: Policy Scenario: Single & Double Outage Import & Export Limits

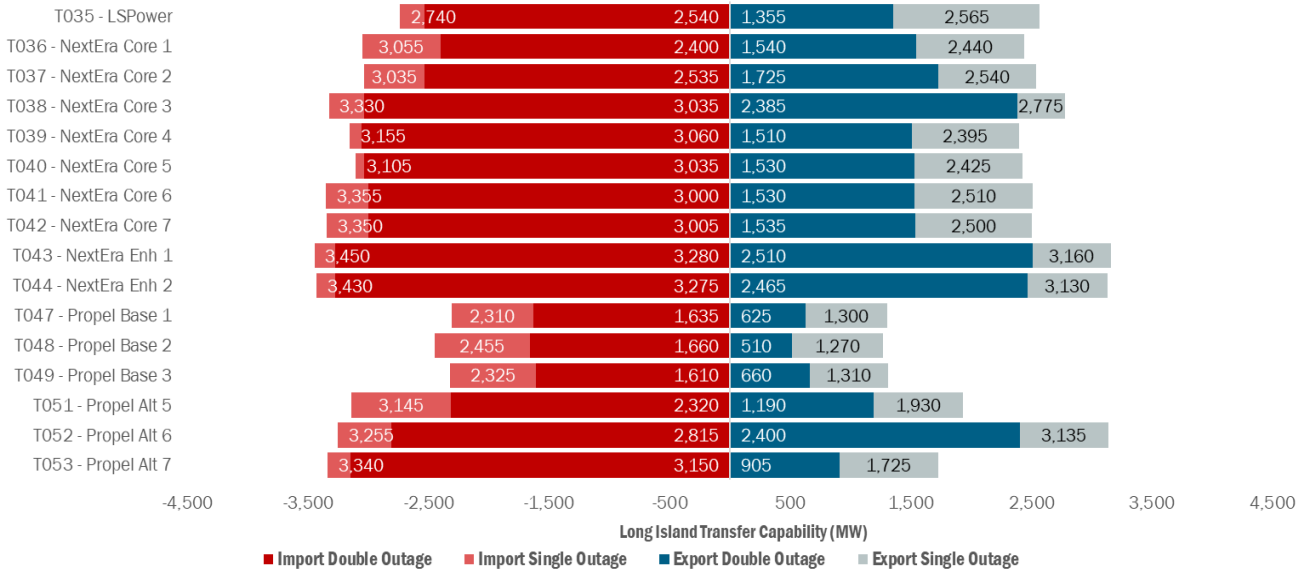
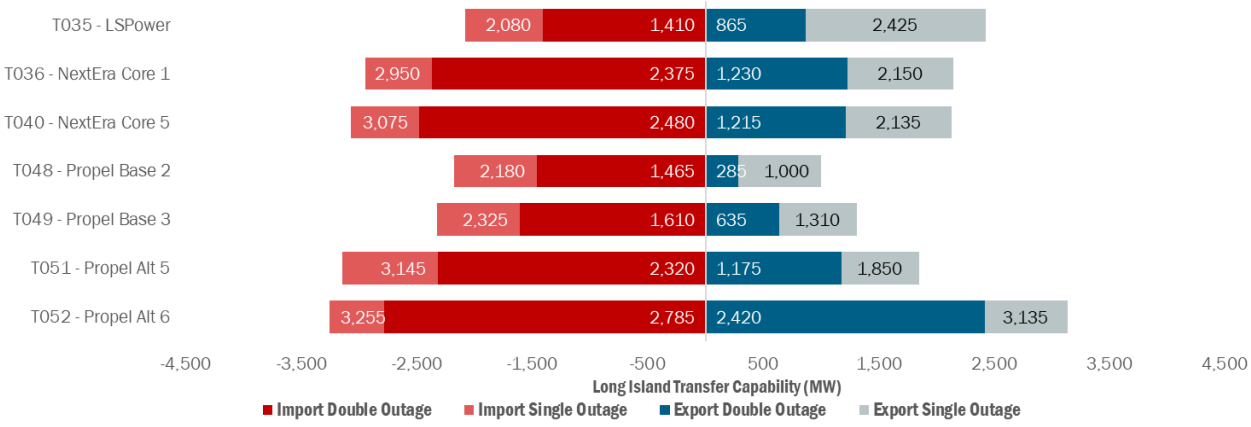


Figure 10: Policy + B-VS Scenario: Single & Double Outage Import & Export Limits



3.5.2 Operability – Transmission Operations for the Future Grid

In the 2019 Report on "Reliability and Market Considerations for a Grid in Transition,"[11] the NYISO identified potential reliability concerns when operating under future high levels of intermittent generation with system and locational demand requirements that may be difficult to forecast in real-time operations.

[11] https://www.nyiso.com/documents/20142/2224547/Reliability-and-Market-Considerations-for-a-Grid-in-Transition-20191220%20Final.pdf

One of the identified reliability concerns relates to the NYISO's continued ability to maintain secure bulk electric system transmission operations within applicable reliability requirements, including all North American Reliability Corporation (NERC) Standards, Northeast Power Coordinating Council (NPCC) Requirements, and New York State Reliability Council (NYSRC) Reliability Rules.

In evaluating the ability to maintain secure operations, the NYISO considered a number of risk factors in accessing the expected transmission operations performance of each project given the anticipated future grid conditions. The primary areas of future risk that the NYISO considered include the impact of offshore wind variability, net-load variability, forecasting errors, and transmission outages.

Offshore Wind Variability, Net-Load Variability, and Forecasting Error

The Long Island zone is unique in its limited transmission connections to the rest of New York State, and this creates challenges when faced with variability in both demand and resources. Net-load variability is the combined amount of MW variability that will exist in a future grid due to real-time changes in electrical demand and output of both behind-the-meter and utility-scale solar photovoltaic resources connected to the Long Island system. The combined variability of net-load and offshore wind coupled with the inherent error margin in forecasting demand and wind output results in the total amount of variability that will need to be managed over the real-time scheduling period.

Based on the NYISO's experience in operating the AC lines connecting Long Island to the rest of the state, the higher voltage transmission grid (345 kV) naturally responds to impacts due to Long Island net-load forecasting errors and variability. Such variability and forecasting errors can adversely impact the NYISO's ability to maintain reliable transmission operations. Reliable transmission operation requires the NYISO to maintain bulk electric transmission line power flows and station voltages within normal operating limits. Consistent with NYISO Operation's existing practices, this is achieved by reserving a certain level of transmission margin on the impacted AC transmission facilities to address operational impacts, such as the Long Island net-load forecasting errors and variability.

Under existing practices in operating today's grid, a 100 MW transmission constraint margin is applied for the existing 345 kV AC transmission lines connecting Long Island to the rest of the state grid to manage the current level of Long Island net-load forecasting errors and variability. For the future grid, the NYISO expects that the transmission constraint margin applied to the AC transmission lines would need to be increased to at least 600 MW to accommodate the variability of 3,000 MW of offshore wind resources connected to Long Island, and the margin could be greater than 1,000 MW as Long Island offshore wind resources approach 6,000 MW. As further discussed below, the impact of this necessary margin on grid operations becomes a limiting factor when there are fewer AC tie lines between Long Island and the rest of

the state. HVDC transmission lines connecting Long Island to the rest of the state would not naturally respond to net-load variability because such lines would be operated based on a fixed schedule over the real-time scheduling period during which the impacts of Long Island variability and net-load forecasting errors occur. HVDC is a viable technology in many other applications, but the unique proposal by LS Power (T035) would introduce operational complexities based on the need to actively control the HVDC and manage flow on the weaker parallel AC system in response to variability on the future Long Island grid.

Transmission Outages

In addition to the impact of Long Island net-load variability and forecasting errors, the NYISO also considers the potential impact of line outages on maintaining secure transmission operations. In evaluating the operability for each project, the NYISO considered the impact of significant transmission facility outages for extended periods of time. Assuming a single outage condition of one of the two existing 345 kV AC lines between Long Island and the rest of the state, higher levels of forecasting errors and variability impacts are expected to exceed the thermal operating capability of the existing 345 kV AC lines. Without additional AC tie line capability, the NYISO expects that during line outage conditions high levels of Long Island offshore wind output (i.e., greater than 3,000 MW) would need to be curtailed in order to maintain reliable transmission operations.

Estimated Operating Ranges for Proposed Projects

The figure below illustrates the estimated 345 kV AC line operating ranges for different transmission expansion scenarios as well as expected variability of 3,000 MW and 6,000 MW offshore wind resources connected to Long Island. The calculations assume an approximate 700 MW thermal rating for each of the existing and proposed 345 kV AC transmission lines connecting Long Island to the rest of the state grid. An estimated operating range with a positive value reflects the NYISO's ability to maintain reliable transmission operations to address the impacts of increased forecasting errors and variability impacts of the future grid. A negative value for the operating range indicates that there is insufficient ability to accommodate variability of offshore wind resources connected to Long Island.

Figure 11: 345 kV AC Line Operating Range Under Single Line Out Conditions (MW)

Project	600 MW Variability Future Grid (3,000 MW Offshore Wind)	1,000 MW Variability Future Grid (6,000 MW Offshore Wind)
Pre-Project	200	-600
Projects with no additional 345 kV AC tie-line	200	-600
Projects with 1 additional 345 kV AC tie-line	1,600	800

Project	600 MW Variability Future Grid (3,000 MW Offshore Wind)	1,000 MW Variability Future Grid (6,000 MW Offshore Wind)
Projects with 2 additional 345 kV AC tie-line	3,000	2,200
Projects with 3 additional 345 kV AC tie-line	4,400	3,600

The figure illustrates that those projects with one or more new 345 kV AC lines have a greater operating range that would allow for larger or unexpected values of forecast uncertainty and variability of the future grid. For example, for the pre-project condition with only the existing 345 kV AC lines connecting Long Island to the rest of the state grid, the figure indicates a 600 MW deficiency in operating range when managing variability of 1,000 MW associated with 6,000 MW of offshore wind connected to Long Island. The illustrative calculation is:

-600 MW = (700 MW Import Capability - 1,000 MW Variability) + (700 MW Export Capability – 1,000 MW Variability).

Each additional 345 kV AC line connecting Long Island to the rest of the state grid would result in a 1,400 MW increase in operating range. The illustrative calculation is:

1,400 MW = (700 MW Import Capability) + (700 MW Export Capability).

All but one of the identified top-tier projects for the Long Island PPTN include additional 345 kV AC transmission lines connecting Long Island to the rest of the state grid. The T035 LS Power proposal includes three 1,200 MW bi-directional HVDC lines between Long Island and the rest of the state. Without additional AC lines connecting Long Island to the rest of the state, the impact of offshore wind variability and Long Island net-load forecasting errors will arise only on the existing 345 kV AC lines connecting Long Island to the rest of the state grid.

All of the proposed projects that include one or more 345 kV AC lines connecting Long Island to the rest of the state grid would accommodate the variability associated with 6,000 MW of offshore wind connected to Long Island under line outage conditions. Given that the T035 LS Power proposal does not include any additional 345 kV AC tie lines, it is expected that the proposal could accommodate the variability of 3,000 MW of Long Island offshore wind but would not accommodate the variability of 6,000 MW of offshore wind assuming one of the existing 345 kV AC transmission lines is out of service. This represents a significant limitation for the future operability of the T035 LS Power proposal, assuming offshore wind expansion greater than 3,000 MW.

3.5.3 System Strength

System Strength refers to the grid's voltage stiffness and ability of system components, especially Inverter-Based Resources (IBRs), to respond "as expected" to system perturbations. Weighted Short-Circuit Ratio (WSCR) is a common screening method to obtain a high-level understanding of the system strength with multiple IBRs in close proximity. While the NERC does not have a minimum WSCR criterion, a higher WSCR generally indicates a stronger system. The WSCR results are shown in Figure 12 and more details on the analysis can be found in Appendix K. Projects employing a greater number of 345 kV HVAC facilities generally have a higher level of WSCR values, which would help to facilitate the integration of future IBRs.

Figure 12: Weighted Short-Circuit Ratio (WSCR)

Project	WSCR			
	N-0	N-1	N-2	N-3
Pre-Project	1.94	1.83	1.61	n/a
T035 - LS Power	0.82	0.78	0.7	n/a
T036 - NextEra Core 1	2.49	2.46	2.39	2.12
T037 - NextEra Core 2	2.65	2.63	2.59	2.47
T038 - NextEra Core 3	2.5	2.45	2.38	2.26
T039 - NextEra Core 4	2.55	2.49	2.4	2.17
T040 - NextEra Core 5	2.54	2.48	2.4	2.16
T041 - NextEra Core 6	1.79	1.75	1.68	1.45
T042 - NextEra Core 7	1.79	1.75	1.68	1.45
T043 - NextEra Enh 1	1.47	1.47	1.44	1.39
T044 - NextEra Enh 2	1.91	1.9	1.87	1.78
T047 - Propel Base 1	2.26	2.23	2.11	1.95
T048 - Propel Base 2	2.21	2.15	2.02	1.78
T049 - Propel Base 3	2.24	2.2	2.06	1.87
T051 - Propel Alt 5	2.29	2.26	2.17	2.09
T052 - Propel Alt 6	2.59	2.55	2.42	2.32
T053 - Propel Alt 7	1.34	1.31	1.21	1.07

3.5.4 Physical Substation Resiliency

Resiliency of the proposed projects' associated substations was assessed based on three categories—substation bus type, flood risk, and hurricane risk. Each projects' substations were ranked based on its performance in each category. Total resiliency score for each project was calculated by summing the three category rankings. The lower the score, the better the projects' associated substations perform in context of this metric.

Figure 13: Total Resiliency Score

Project	Total Resiliency Score
T035 - LSPower	13.5
T036 - NextEra Core1	33.5
T037 - NextEra Core 2	41.5
T038 - NextEra Core 3	61
T039 - NextEra Core 4	66
T040 - NextEra Core 5	52
T041 - NextEra Core 6	49.5
T042 - NextEra Core 7	41.5
T043 - NextEra Enh 1	63
T044 - NextEra Enh 2	75.5
T047 - Propel Base 1	34
T048 - Propel Base 2	31.5
T049 - Propel Base 3	34
T051 - Propel Alt 5	34
T052 - Propel Alt 6	34
T053 - Propel Alt 7	46

3.5.5 Summary of Operability Assessment

Key Findings

- ✓ **Both import and export capabilities are important for Long Island.** Projects, such as T043 NextEra Enhanced 1 and T052 Propel Alt 6, offer a wide range of flexibility, while projects like T047 Propel Base 1, T048 Propel Base 2, and T049 Propel Base 3 offer a narrower range in their ability to both import to and export from Long Island.

- ✓ **When reviewing these transfer limits, larger transfer import and export limits are preferable**. The increase of transfer limits under outage conditions is the key finding under the operability metric, with larger transfer limits giving the NYISO more operational flexibility. The electrical grid is rarely operated with all facilities in service, and projects that can maintain

large transfer limits under outage conditions bolster reliability and are more favorable.

- ✓ **All of the proposed projects that include one or more additional 345 kV AC lines connecting Long Island to the rest of the state grid would accommodate variability of up to 6,000 MW of offshore wind connected to Long Island.**
- ✓ **For projects that do not include additional 345 kV AC tie lines between Long Island and the rest of the state (e.g., T035 LS Power), the system would handle the variability of 3,000 MW of offshore wind connected to Long Island, but it could not accommodate the level of variability associated with 6,000 MW of offshore wind, thus limiting the operability of the project and the grid.**
- ✓ **While there are currently no applicable reliability criteria for system strength, this analysis helps to understand how the system might behave with the different proposals.** Projects T035 LS Power and T053 Propel Alt 7 do not increase the short circuit strength and further investigation may be required prior to integration of nearby inverter-based resources.
- ✓ **Projects with stronger AC tie lines integrating Long Island with the rest of the NYCA system provide higher system strength.** Projects with VSC HVDC line(s) may help system performance by coordinating with nearby inverter-based resources without increasing the weighted short circuit ratio.
- ✓ **The projects that perform higher in the resiliency evaluation tend to have gas-insulated substation designs and more inland interconnection points on the system that are less susceptible to extreme weather events.**

3.6 Production Cost Benefits & Performance

The NYISO evaluates the economic and performance benefits of proposed projects based on several key metrics that consider production cost savings, Long Island import and export energy enhancements, offshore wind curtailment improvements, and carbon dioxide (CO_2) emissions reductions.

3.6.1 Production Cost Benefits

Evaluation Metric: Production Cost Benefits

Purpose: Assess the economic benefits of the proposed projects by reducing generation production costs in the New York Control Area

Evaluation: Hourly resolution production cost simulations for 2030, 2035, 2040, and 2045 under several future scenarios

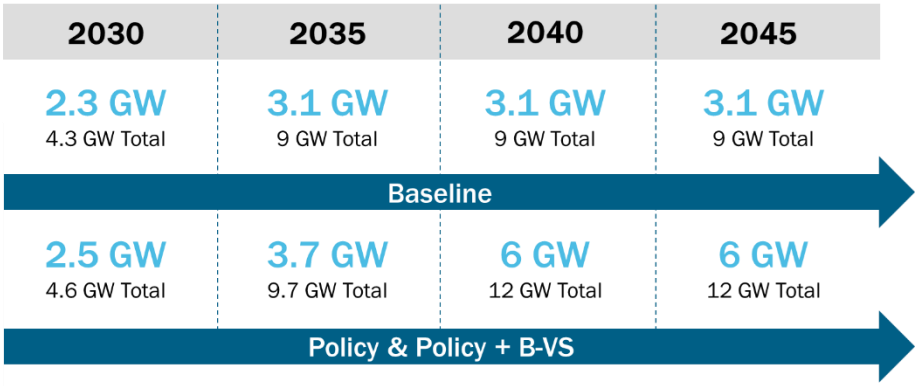
Considerations:

- Projects to unbottle offshore wind energy production
- Projects able to reduce or eliminate offshore wind curtailment will create the greatest production cost savings
- Larger production cost savings reduces the societal cost of producing electricity to meet New York demand

Production cost simulations can gauge the effectiveness of a proposed transmission project in reducing NYCA-wide production cost. A pre-project simulation is first performed without a project in place to establish a baseline for comparison with all assumptions included for the model. A post-project simulation with the transmission project added to the underlying transmission model is performed and the result are compared. Production cost savings for a project are calculated as the difference between the pre-project and post-project results over the duration of a project's study period, starting at the estimated in-service date and extending 20 years.

Assumptions related to generation and load are kept consistent across both simulations, excluding assumed offshore wind installed capacity. Details on the production cost simulation assumptions are further described in Appendix L. The offshore wind capacity varies between the Baseline and Policy Scenarios as shown in the figure below.

Figure 14: Long Island Offshore Wind Addition Timelines



The Long Island PPTN project simulations all show improvements in the export capability of Long Island by adding tie lines between Long Island and the lower Hudson Valley. This added transfer capacity and upgrades to the internal Long Island system reduce the amount of curtailment from offshore wind resources. The energy produced through reduced curtailment of offshore wind resources can then be used to offset more expensive generation to meet New York's energy demand and, therefore, produce a production cost savings. Production cost savings are also created by offsetting high-cost energy imports from neighboring regions with lower cost New York-based generation that was previously inaccessible due to transmission congestion.

In general, all of the proposed projects produce savings by unbottling offshore wind resources in Long Island and reducing the amount of imports from neighboring regions. The figures below show the estimated production cost savings for each project over a 20-year period in 2022 real million dollars.

Figure 15: Estimated 20-Year Production Cost Savings (2022 $M)

Estimated Total 20-Year Savings (2022 $M)			
Project	Baseline	Policy	Policy + B-VS
T035 - LS Power	104	340	906
T036 - NextEra Core 1	108	303	291
T037 - NextEra Core 2	108	364	378
T038 - NextEra Core 3	109	380	402
T039 - NextEra Core 4	39	305	307
T040 - NextEra Core 5	107	339	332
T041 - NextEra Core 6	110	291	308
T042 - NextEra Core 7	110	291	308
T043 - NextEra Enh 1	87	458	745
T044 - NextEra Enh 2	81	441	582
T047 - Propel Base 1	109	337	568
T048 - Propel Base 2	99	313	513
T049 - Propel Base 3	102	344	902
T051 - Propel Alt 5	104	341	609
T052 - Propel Alt 6	96	352	618
T053 - Propel Alt 7	108	360	622

Figure 16: Production Cost Savings Over 20 Years (2022 $M)

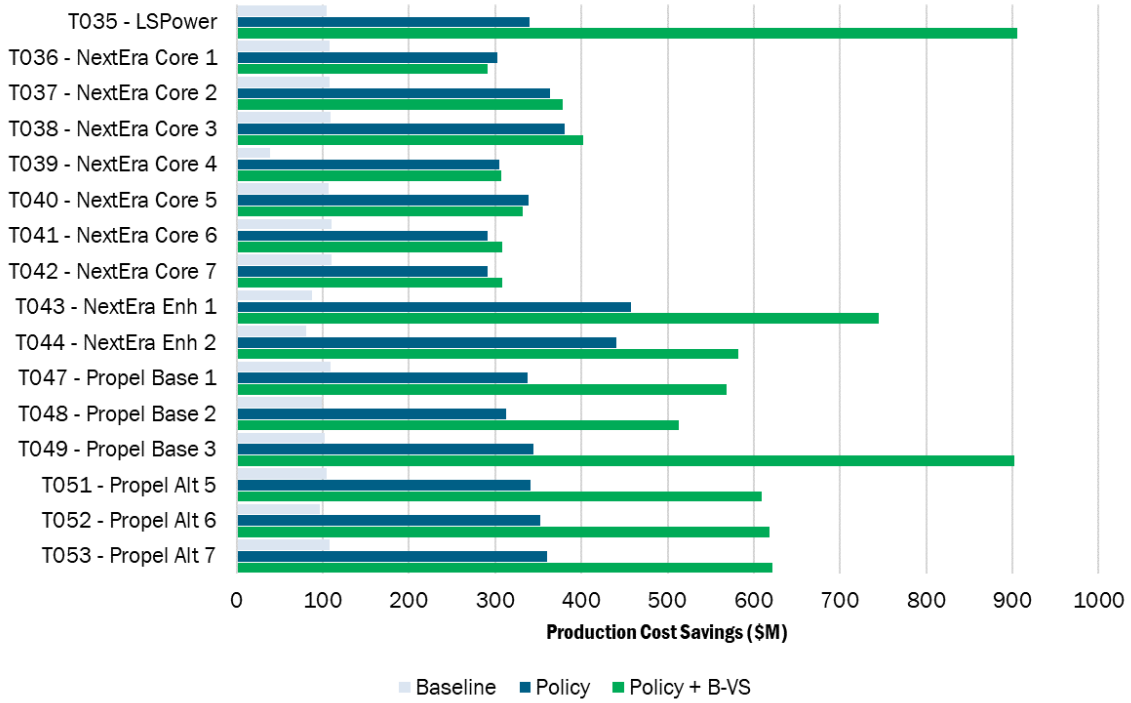
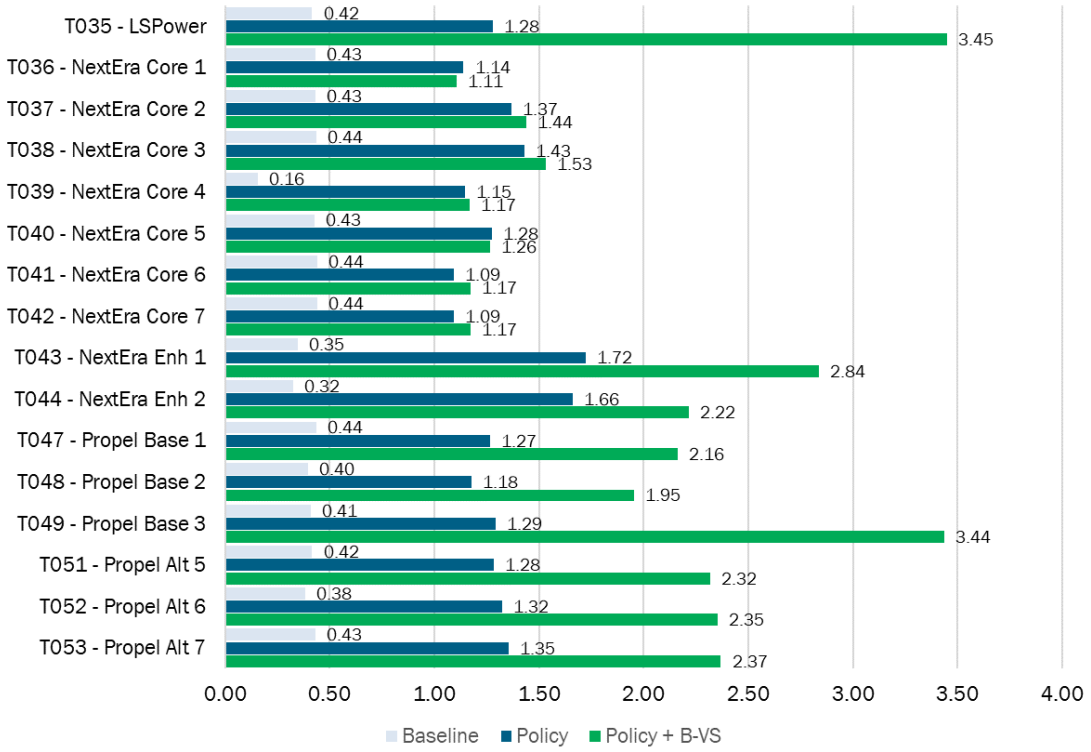


Figure 17: Savings As Percentage of Total NYCA-Wide Production Cost



In general, the production cost savings in the Baseline Scenario are relatively low as this scenario does not include the full achievement of CLCPA policies and has a reduced level of offshore wind capacity as compared to other scenarios. Offshore wind curtailment in the Baseline Scenario is less than 5% prior to transmission projects and presents less opportunity for projects to produce economic benefit.

Production cost savings are higher in the Policy and Policy + B-VS Scenarios due to higher offshore wind curtailment levels in the pre-project simulations. Full achievement of the CLCPA increases offshore wind curtailment in both scenarios, while the inclusion of the existing Barrett-Valley Stream transmission constraints in the Policy + B-VS scenario causes additional curtailment. The proposed projects all unbottle various levels of offshore wind generation in Long Island and reduce the net import for the New York Control Area (NYCA) system.

This analysis, however, shows more production cost savings from the proposed projects that relieve the network constraints on the 138 kV paths. With the Barrett-Valley Stream path secured, Empire Wind II curtailment accounts for almost 60% of total offshore wind curtailment in Long Island in 2040. As a result, the projects that upgrade the lines near Barrett 138 kV or include alternate paths out of the Barrett 138 kV substation for power to flow (i.e., relieving existing transmission constraints) have higher production cost

savings due to unbottling of additional offshore wind generation.

Additionally, the NYISO investigated the impact of an increase in transmission constraint margins needed to accommodate the increased net-load variability caused by offshore wind generation in Long Island (see Section 3.5.2 above). Higher constraint margins were shown to increase pre-project offshore wind curtailment energy by up to 22%. These findings bolster the production cost benefits of projects analyzed by up to three times the original Policy + B-VS Scenario savings. See Appendix L for additional details.

Key Findings

- ✓ **Production cost savings are not a material distinguishing factor among projects in the Baseline and Policy Scenarios.** Pre-project offshore wind generation curtailment rates are ~10% and post-project displaced energy is often from other renewables. As a result, they produce minimal savings by swapping low-cost energy. Additionally, the model only considers conditions with all lines in service and with no maintenance or random transmission outages. Therefore, curtailments presented in this study are conservative estimates and might not fully capture any additional curtailments due to transmission outages.

- ✓ **Production cost savings in the Barrett-Valley Stream Scenario show that T035, T043, and T049 provide substantial production cost benefit.** Under the Policy + B-VS Scenario, which includes the existing Barrett–Valley Stream transmission constraints, most projects show greater production cost benefits than in the evaluation without the constraint. The most effective projects have two to three times the production cost savings when evaluated under the Policy + B-VS Scenario compared to the Policy Scenario without the Barrett-Valley Stream transmission constraint.

3.6.2 Performance Evaluation

Evaluation Metric: Performance

Purpose: Considers how the proposed project may affect the utilization of the system, deliverability of offshore wind energy, and reduction in carbon dioxide emissions

Evaluation: Long Island energy transfers, offshore wind generated energy, fossil fuel related carbon dioxide emissions

Considerations:

- Higher Long Island import/export energy
- Higher offshore wind generation (i.e., lower offshore wind curtailment)
- Reduction in regional carbon dioxide emissions

For the Long Island PPTN, the performance metric focuses on the ability of a project to efficiently utilize the grid to increase energy transfers between Long Island and the rest of NYCA. Unlike the transfer capability metric, which identifies the maximum instantaneous transfer limit (MW) of an interface, transmission utilization metric identifies the total annual energy transfer (MWh) of an interface. The results help determine the effectiveness of a transmission project to export offshore wind energy off Long Island and to import energy when needed.

This performance analysis also includes an evaluation of the impact of proposed transmission projects on the energy deliverability of offshore wind projects on Long Island, the import and export of energy with neighboring regions, and the dispatch of fossil generating plants and resulting CO_2 emissions.

3.6.2.1 Transmission Utilization

For the purposes of this analysis, transmission utilization is measured as the total annual energy transacted across existing and proposed project inter-zonal transmission paths that interconnect to the Zone K. This also includes transmission paths that connect to other areas within the NYCA and external to the NYCA.

Transmission utilization is split into imported and exported energy, netted on an hourly basis, then summed over each year to delineate the directional flow impact of each project. The figures below present the 20-year utilization results for each proposed project under the Baseline and Policy Scenarios.

Figure 18: Baseline Scenario 20-Year Transmission Utilization

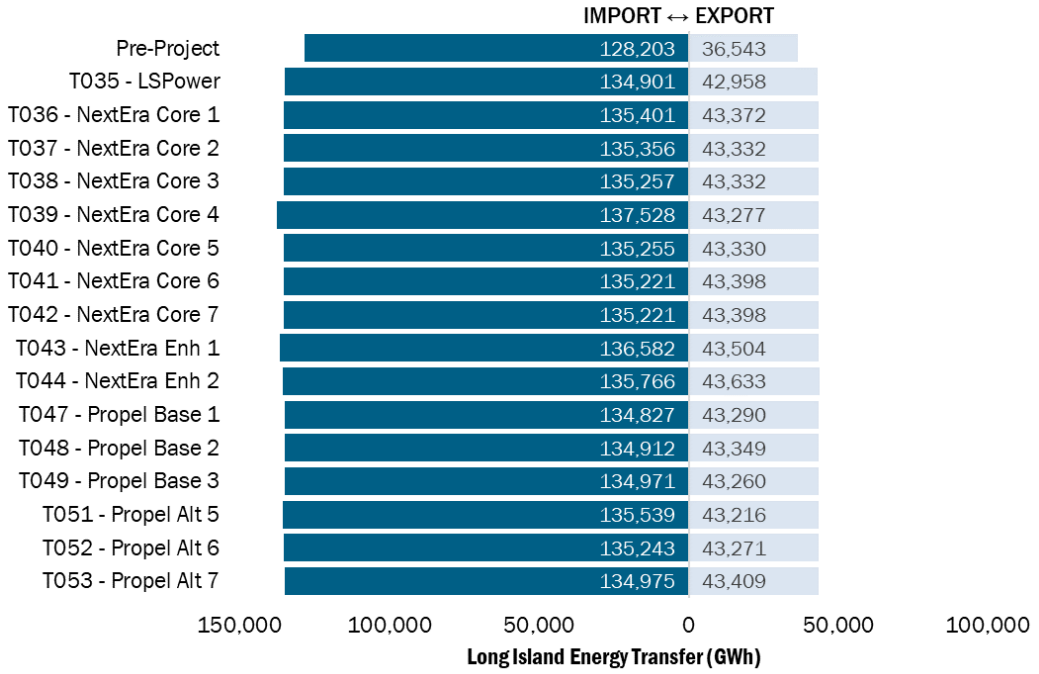


Figure 19: Policy Scenario 20-Year Transmission Utilization

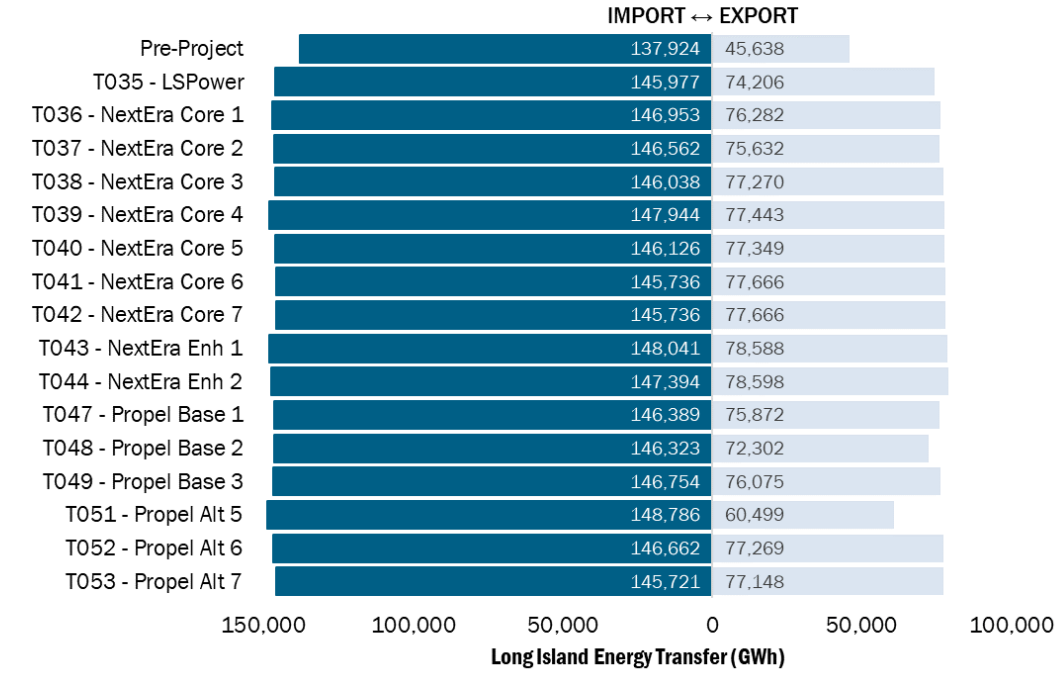
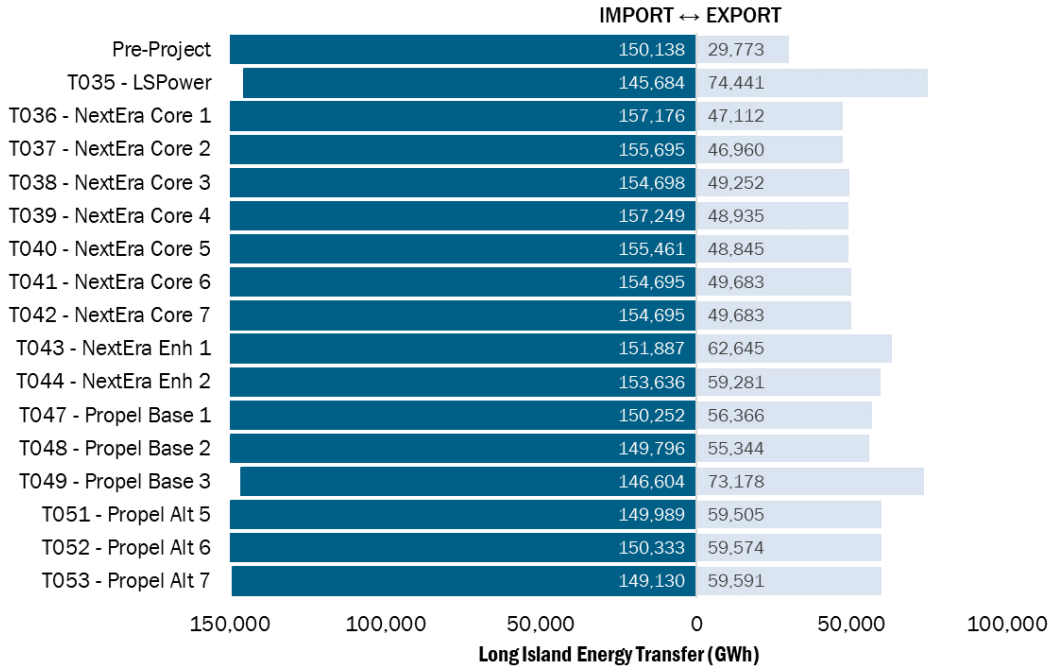


Figure 20: Policy + B-VS Scenario 20-Year Transmission Utilization



3.6.2.2 Long Island Offshore Wind Energy Deliverability

A key driver behind the system performance and economic benefits presented is the ability of a proposed transmission project to increase offshore wind energy production through curtailment reductions. The NYISO leverages an energy deliverability measure to gauge the effectiveness of a project in reducing curtailment, which is defined below.

$$Energy\ Deliverability\ (\%) = \frac{Annual\ Energy\ Production\ (GWh)}{Potential\ Annual\ Energy\ Production\ (GWh)}$$

$$Energy\ Deliverability\ (\%) = 100\% - Curtailment\ (\%)$$

Energy deliverability represents the ability of renewable generation (e.g., wind, solar, and hydro) to inject energy into the grid to serve end-use consumers without curtailment. It is expressed as the ratio of energy generated to total potential energy for those resources. Generally, energy deliverability is reduced as more renewable capacity is added to the system due to the transmission constraints in the system. The greater the renewable generation curtailment in a specific location, the greater the opportunity for transmission investment.

In Long Island, transmission constraints exist today and could become more severe within the Zone K and at the ties connecting Zone K to other zones. With the anticipated increase in the injection of offshore wind energy into Long Island, both types of constraints affect the energy deliverability of offshore wind production. To enable the effective export of energy from Long Island, proposed projects may need to address both inter-zonal and intra-zonal transmission constraints. Projects with high offshore wind energy deliverability values (100%) will have to effectively address transmission constraints that limit offshore wind energy delivery and export.

The figures below show the percent of energy deliverability by the proposed projects for the Baseline and Policy Scenarios for each year simulated.

Figure 21: Baseline Scenario Long Island Offshore Wind Energy Deliverability

Project	2030	2035	2040	2045
Baseline Case	99.4%	95.7%	97.2%	98.8%
T035 - LS Power	100.0%	100.0%	100.0%	100.0%
T036 - NextEra Core 1	100.0%	100.0%	100.0%	100.0%
T037 - NextEra Core 2	100.0%	100.0%	100.0%	100.0%
T038 - NextEra Core 3	100.0%	100.0%	100.0%	100.0%
T039 - NextEra Core 4	100.0%	100.0%	100.0%	100.0%
T040 - NextEra Core 5	100.0%	100.0%	100.0%	100.0%
T041 - NextEra Core 6	100.0%	100.0%	100.0%	100.0%
T042 - NextEra Core 7	100.0%	100.0%	100.0%	100.0%
T043 - NextEra Enh 1	100.0%	100.0%	100.0%	100.0%
T044 - NextEra Enh 2	100.0%	100.0%	100.0%	100.0%
T047 - Propel Base 1	100.0%	100.0%	100.0%	100.0%
T048 - Propel Base 2	100.0%	100.0%	100.0%	100.0%
T049 - Propel Base 3	100.0%	100.0%	100.0%	100.0%
T051 - Propel Alt 5	100.0%	100.0%	100.0%	100.0%
T052 - Propel Alt 6	100.0%	100.0%	100.0%	100.0%
T053 - Propel Alt 7	100.0%	100.0%	100.0%	100.0%

Figure 22: Policy Scenario Long Island Offshore Wind Energy Deliverability

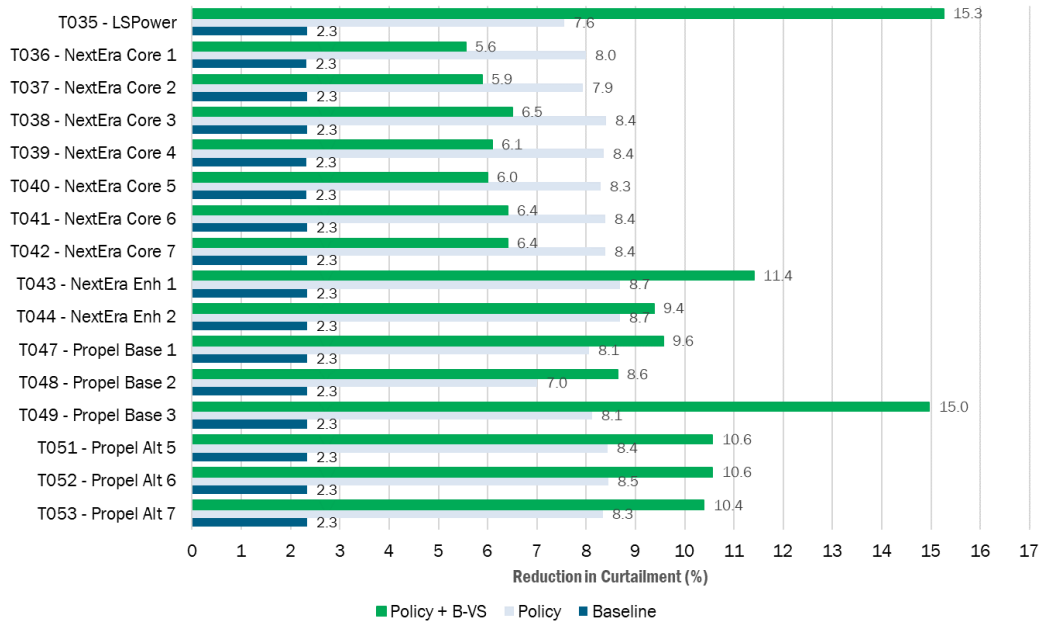
Project	2030	2035	2040	2045
Policy Case	98.3%	96.3%	87.0%	89.7%
T035 - LS Power	99.5%	99.9%	98.4%	98.4%
T036 - NextEra Core 1	99.0%	99.9%	99.1%	99.3%
T037 - NextEra Core 2	99.0%	99.9%	99.1%	99.1%
T038 - NextEra Core 3	99.0%	99.9%	99.8%	99.8%
T039 - NextEra Core 4	99.0%	99.8%	99.6%	99.8%
T040 - NextEra Core 5	99.0%	99.9%	99.6%	99.6%
T041 - NextEra Core 6	99.1%	99.9%	99.8%	99.8%
T042 - NextEra Core 7	99.1%	99.9%	99.8%	99.8%
T043 - NextEra Enh 1	100.0%	100.0%	100.0%	100.0%
T044 - NextEra Enh 2	100.0%	100.0%	100.0%	100.0%
T047 - Propel Base 1	99.1%	99.9%	99.1%	99.4%
T048 - Propel Base 2	99.0%	99.9%	97.3%	98.0%
T049 - Propel Base 3	99.0%	99.9%	99.1%	99.6%
T051 - Propel Alt 5	99.2%	99.9%	99.8%	99.8%
T052 - Propel Alt 6	99.2%	99.9%	99.8%	99.9%
T053 - Propel Alt 7	99.1%	99.9%	99.7%	99.7%

Figure 23: Policy + B-VS Scenario Long Island Offshore Wind Energy Deliverability

Project	2030	2035	2040	2045
Policy Case + B-VS	75.5%	83.9%	84.1%	86.3%
T035 - LS Power	99.5%	99.9%	98.4%	98.4%
T036 - NextEra Core 1	79.4%	86.9%	91.7%	92.1%
T037 - NextEra Core 2	79.9%	87.3%	92.0%	92.3%
T038 - NextEra Core 3	80.5%	87.8%	92.7%	92.9%
T039 - NextEra Core 4	79.6%	87.3%	92.4%	92.7%
T040 - NextEra Core 5	79.6%	87.3%	92.3%	92.5%
T041 - NextEra Core 6	79.9%	87.3%	92.8%	93.1%
T042 - NextEra Core 7	79.9%	87.3%	92.8%	93.1%
T043 - NextEra Enh 1	89.6%	93.5%	96.5%	96.7%
T044 - NextEra Enh 2	81.8%	88.3%	93.5%	100.0%
T047 - Propel Base 1	87.6%	92.4%	94.2%	94.9%
T048 - Propel Base 2	86.1%	91.4%	93.6%	93.9%
T049 - Propel Base 3	99.0%	99.8%	97.7%	98.5%
T051 - Propel Alt 5	88.6%	93.1%	95.5%	95.8%
T052 - Propel Alt 6	87.5%	92.5%	95.8%	96.3%
T053 - Propel Alt 7	87.8%	92.6%	95.6%	95.8%

In the Baseline Scenario, all projects are effective in fully eliminating offshore wind curtailment on Long Island (2.3% over the 20-year study period) and enabling 100% energy deliverability. Projects differed in their ability to reduce curtailment in the Policy and Policy + B-VS Scenarios with only two projects eliminating all of the offshore wind energy curtailment in the Policy Scenario and one in the Policy + B-VS Scenario. Energy deliverability of offshore wind energy on Long Island ranges between 98.3% and 100% in the Policy Scenario and between 75.5% and 100% in the Policy + B-VS for the proposed projects. Prior to projects being modelled, offshore wind energy deliverability in the Baseline, Policy, and Policy + B-VS Scenarios averaged 97.8%, 92.8%, and 82.5%, respectively. The figure below shows the reduction in offshore wind energy curtailed for each project in each of the scenarios.

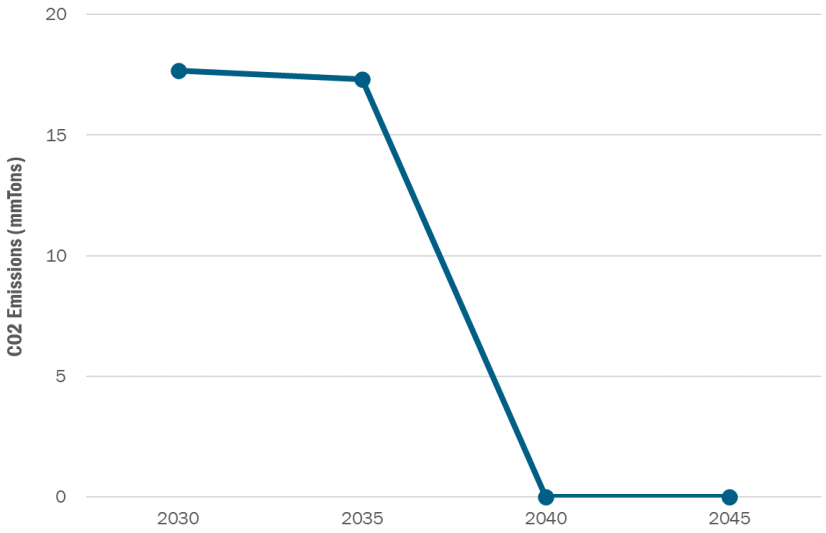
Figure 24: Unbottled Offshore Wind Production



3.6.2.3 CO_2 Emissions

Each scenario model includes thermal generation capacity that burn fossil fuel to generate energy and, through that process, emit CO_2. The Baseline Scenario includes announced retirements of fossil fuel generation but does not force the retirement of these plants due to compliance with New York policy. The Policy and Policy + B-VS Scenario model the full achievement of CLCPA mandates and, therefore, include the retirement of all existing fossil-fuel generating units by 2040. The figure below shows the annual NYCA CO_2 emissions in the Policy Scenarios (without the addition of the proposed projects) and highlights the elimination of CO_2 emissions beyond 2040.

Figure 25: Annual NYCA CO_2 Emissions in Policy Scenarios



The figures below quantify the estimated 20-year CO_2 emissions for the Baseline, Policy, and Policy + B-VS Scenarios for the pre-project and post-project simulations.

Figure 26: Baseline Scenario 20-Year Estimated CO_2 Emissions (Million Tons)

Project	LI	NYC	NYCA	Regional
Baseline (Pre-Project)	53	194	450	8,248
T035 - LS Power	49	197	451	8,246
T036 - NextEra Core 1	49	197	451	8,246
T037 - NextEra Core 2	49	196	451	8,245
T038 - NextEra Core 3	49	196	451	8,246
T039 - NextEra Core 4	48	201	452	8,246
T040 - NextEra Core 5	49	197	451	8,246
T041 - NextEra Core 6	49	197	451	8,246
T042 - NextEra Core 7	49	197	451	8,246
T043 - NextEra Enh 1	48	198	451	8,247
T044 - NextEra Enh 2	49	199	453	8,245
T047 - Propel Base 1	49	197	451	8,244
T048 - Propel Base 2	49	197	451	8,245
T049 - Propel Base 3	49	197	453	8,244
T051 - Propel Alt 5	49	197	451	8,245
T052 - Propel Alt 6	49	197	451	8,245
T053 - Propel Alt 7	49	197	451	8,245

Figure 27: Policy Scenario 20-Year Estimated CO_2 Emissions (Million Tons)

Project	LI	NYC	NYCA	Regional
Policy (Pre-Project)	24	70	175	8,060
T035 - LS Power	22	72	176	8,056
T036 - NextEra Core 1	22	71	175	8,057
T037 - NextEra Core 2	22	72	176	8,056
T038 - NextEra Core 3	22	72	176	8,057
T039 - NextEra Core 4	22	72	177	8,054
T040 - NextEra Core 5	22	72	176	8,057
T041 - NextEra Core 6	22	71	175	8,058
T042 - NextEra Core 7	22	71	175	8,058
T043 - NextEra Enh 1	22	71	177	8,053
T044 - NextEra Enh 2	22	72	177	8,052
T047 - Propel Base 1	22	72	176	8,051
T048 - Propel Base 2	22	72	176	8,056
T049 - Propel Base 3	22	72	176	8,052
T051 - Propel Alt 5	22	72	176	8,056
T052 - Propel Alt 6	22	72	176	8,056
T053 - Propel Alt 7	22	72	176	8,056

Figure 28: Policy + B-VS Scenario 20-Year Estimated CO_2 Emissions (Million Tons)

Project	LI	NYC	NYCA	Regional
Policy + B-VS (Pre-Project)	24	72	179	8,072
T035 - LS Power	22	72	176	8,056
T036 - NextEra Core 1	21	72	179	8,071
T037 - NextEra Core 2	21	73	180	8,069
T038 - NextEra Core 3	21	73	179	8,069
T039 - NextEra Core 4	21	73	179	8,066
T040 - NextEra Core 5	21	73	179	8,070
T041 - NextEra Core 6	21	72	178	8,070
T042 - NextEra Core 7	21	72	178	8,070
T043 - NextEra Enh 1	22	72	178	8,061
T044 - NextEra Enh 2	22	73	181	8,062
T047 - Propel Base 1	22	72	178	8,058
T048 - Propel Base 2	22	72	178	8,063
T049 - Propel Base 3	22	72	176	8,052
T051 - Propel Alt 5	22	72	178	8,063
T052 - Propel Alt 6	22	72	178	8,063
T053 - Propel Alt 7	22	72	178	8,063

CO_2 emissions only occur within the first 10-years of the Policy Scenarios as the models include full achievement of the CLCPA mandate for 100% carbon-free generation by 2040. In the Baseline and Policy Scenarios, the addition of the proposed projects results in a reduction in the CO_2 emissions on a regional level (i.e., NYISO, ISO-NE, PJM, and IESO). Because energy is economically exchanged between the NYISO and neighboring systems, the addition of the proposed projects can increase CO_2 emissions from local generation dispatch but reduce the total regional CO_2 emissions from generation dispatch outside of New York when internal generation is more cost effective than external generation. In each scenario, the proposed projects result in an increase in CO_2 emissions due to increased fossil dispatch in the Capital and New York City areas. This increase offsets imported energy from fossil generators in other neighboring systems (primarily ISO-NE and PJM) and results in a net regional CO_2 emission reduction.

A number of states in the region participate in the Regional Greenhouse Gas Initiative (RGGI) Cap and Trade Program. This program caps emissions across the multi-state region and sets a consistent emission allowance price. The caps ensure that there is a consistent disincentive to emit CO_2 across the RGGI region in recognition of the interregional nature of air pollutants.

Key Findings

- ✓ **All projects improve the transmission utilization of paths connecting to Long Island, but such improvements do not serve as a differentiating factor.** Projects increase Long Island energy imports by range between of 1% to 6% and energy exports by 19% to 89%.
- ✓ **All projects show reductions in regional CO_2 emission, but the reductions are not significant and are not a distinguishing factor among the projects.** Policy and Policy + B-VS Scenarios already assume the achievement of the CLCPA and inherently eliminated CO_2 emissions by 2040. Consequently, the amount of CO_2 emission that can be offset by offshore wind generation is limited.

3.7 Capacity Benefits

Evaluation Metric: Capacity Benefit

Purpose: Evaluates the incremental capacity benefits of each proposed project

Evaluation: Compare the pre- and post-project system resource adequacy to identify the reduction in the NYCA Loss of Load Expectation (LOLE)

Considerations:

- Greater reduction in the NYCA LOLE compared to the pre-project case

The New York Installed Capacity (ICAP) market provides a market-based mechanism for maintaining reliability of the bulk power system, by procuring sufficient generation capacity to meet the NYCA forecast peak demand plus an Installed Reserve Margin (IRM). Due to limitations on the export and import capabilities of the NYCA bulk power system, particularly in the downstate area, a certain amount of generation capacity must be procured downstate where it is more expensive to procure. The proposed projects to address the Long Island PPTN bring additional import and export capabilities to the downstate area, particularly Long Island. The additional capabilities would allow some capacity procurement to shift upstate where generation capacity is cheaper, resulting in capacity benefits.

The NYISO evaluated the capacity benefits of the proposed projects by assessing their reliability benefits—i.e., their impact on reducing the NYCA Loss of Load Expectation (LOLE) which was set at the New York State Reliability Council criterion of 0.1 event-day/year (or one load loss event every 10 years) in the pre-project cases. Consequently, a reduction in LOLE implies that the capacity procurement requirement for the NYCA can be shifted from the downstate area, particularly Long Island, to the upstate area. This shift will yield a potential for capacity saving in the ICAP market. Finally, the economic value of the capacity benefit of each project was quantified by applying a Cost of Reliability Improvement (CRI) to the project's LOLE reduction. The CRI reflects the market value of providing reliable capacity beyond the minimum resource adequacy requirements. It is calculated based on the compensation that a generator would receive in the capacity market for providing such reliability. More details can be found in the *2021 State of the Market Report.*[12] For the Long Island PPTN, the CRI was calculated to be $800,000 per 0.001 reduction in LOLE (based on nominal 2022 dollars).

The NYISO developed capacity benefit estimates using the Baseline Scenario and the Policy Scenario. **Figure 29** summarizes the reliability benefit (i.e., LOLE reduction) of the proposed projects when

[12] https://www.nyiso.com/documents/20142/2223763/NYISO-2021-SOM-Full-Report-5-11-2022-final.pdf/

compared to the pre-project Baseline and Policy Scenarios at LOLE criterion. See Appendix M for further detail on the capacity benefit evaluation.

Figure 29: Policy Scenario Delta NYCA LOLE (event day/year) on Study Year 2030

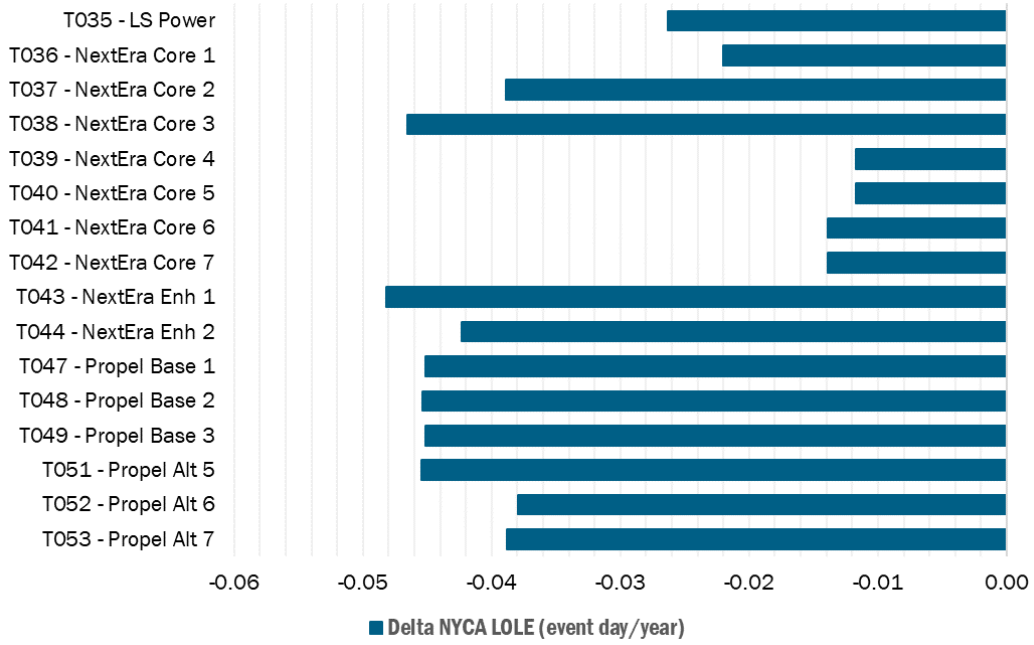
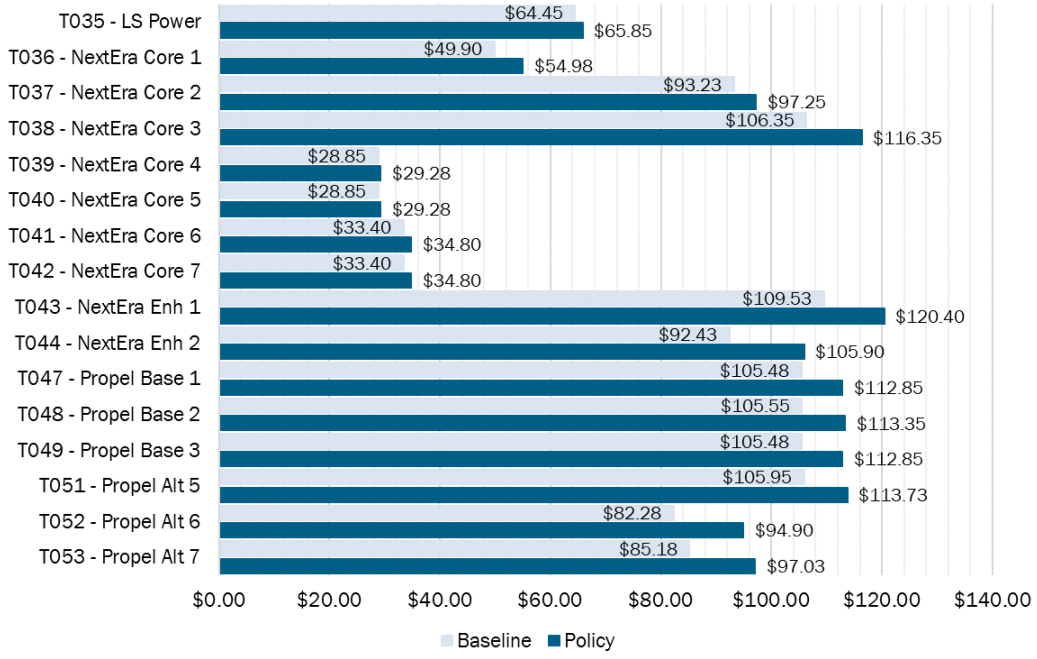


Figure 30: Annual Capacity Benefit (2022 $M)



Key Findings

- ✓ **All proposed projects show reliability improvements that would translate to reduced downstate capacity requirements.** However, the uncertainty of the future resources mix and market conditions makes it difficult to predict the monetary impact that a transmission project will have on the Capacity Market.
- ✓ **Projects with strong tie lines between Long Island and New York City yielded the largest potential capacity savings.**

3.8 Avoided Capital Cost Benefits

Evaluation Metric: Avoided Capital Cost

Purpose: Assesses the economic benefits related to the reduction and/or deferral of future generation projects needed to meet projected future energy demand and renewable policy objectives

Evaluation: Using capacity expansion simulations, model each project's impact on reducing OSW curtailment, increasing transfer capability to/from Long Island, and reducing Long Island capacity reserve requirement and measure reduction in future generation capital cost investment

Considerations:

- Reductions in the amount of upstate renewable generation capacity
- Re-location of Dispatchable Emission Free Resource capacity from Long Island to upstate zones
- Projects that reduce and relocate the most capacity will produce the highest avoided capital cost savings and are preferable

To meet future energy demand and State policies driven by CLCPA a significant amount of new zero emissions generation capacity will need to be installed in the NYISO system. The NYISO's *2021-2040 System & Resource Outlook* found that at least 95 GW of new generation projects and/or modifications to existing fossil plants will be needed by 2040. The addition of a Long Island Public Policy Transmission Project helps to reduce the need for new generation capacity consist with the CLPCA by increasing offshore wind generation production and through stronger transmission connections to Long Island. The avoided capital cost benefit assessment measures the future generation capital costs avoided due to the addition of Public Policy Transmission Project.

3.8.1 Avoided Capital Cost Assessment

The NYISO's capacity expansion model optimizes the future system buildout to meet projected energy and policy requirements while minimizing capital and energy costs. To quantify the capital cost investment in the NYCA, the NYISO used the capacity expansion model for Policy Case Scenario 2 from the NYISO's *2021-2040 System & Resource Outlook*. The NYISO modified the Policy Case Scenario 2 from The Outlook assumptions to include fixing the offshore wind generation buildout schedule per **Figure 14** and modeling transmission upgrades accordingly for each proposed project. This assessment was conducted for both the Policy and Policy + B-VS Scenarios for certain projects that necessitated additional evaluation to distinguish their economic benefits to the transmission system.

The proposed transmission projects are represented in the capacity expansion model through: 1) an increase offshore wind production due to reduced curtailment identified in the production cost models, 2) interzonal transfer limit changes identified in Appendix N, and 3) Zone K capacity reserve margin decreases driven by an increase in transmission security limits also described in Appendix N.

3.8.2 Avoided Capital Cost Results

The system improvements enabled by each transmission project reduce the amount of future generation capacity needed. The two primary factors that drive the magnitude of avoided generation capacity are reduced offshore wind energy curtailments and the increased Zone K import transmission limits. Unbottled offshore wind energy reduces the need to build as much solar capacity in upstate zones and, in turn, provides avoided capital cost savings. Increased import transfer limits into Long Island lower the zone's effective capacity margin requirement and enable the movement of Dispatchable Emissions Free Resource (DEFR) capacity from Zone K to upstate zones where capital costs are lower. The figures below show the results of the avoided cost analysis and disaggregates the impacts of reduced solar capacity buildout and relocated DEFR capacity.

Figure 31: Avoided Cost Savings – Policy Scenario Results

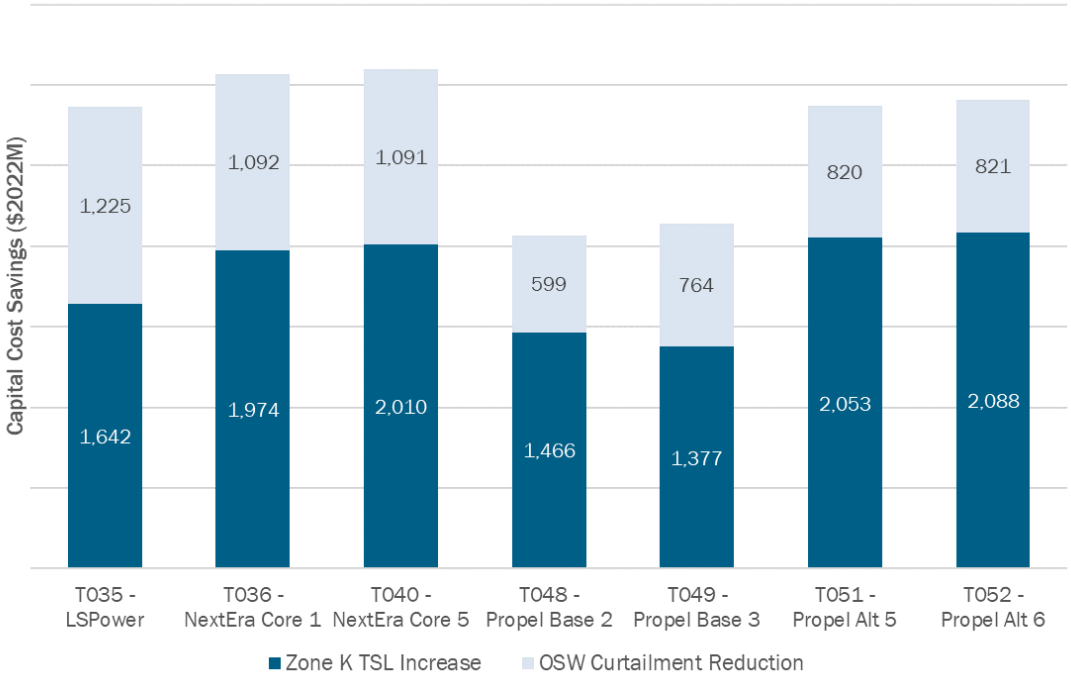
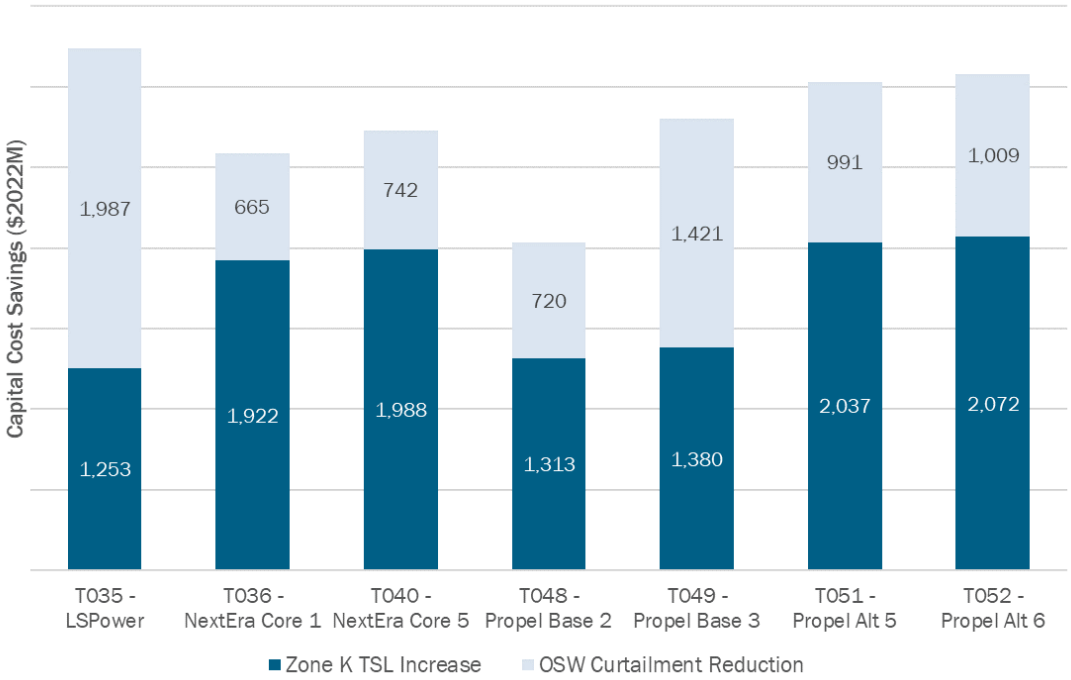


Figure 32: Avoided Cost Savings – Policy + B-VS Scenario Results



The magnitude of the capital cost savings for each project is generally correlated with the amount of increase in Zone K import capability and reduction in offshore wind curtailment. Some secondary factors, such as the zone that is connected to Long Island due to the project and the increase in Zone K export limit due to the project, impact the capital cost savings and tend to also differentiate projects.

The figure below summarizes the total avoided cost savings for each project analyzed.

Figure 33: Total Capital Cost Savings (2022 $M)

Project	Total Capital Cost Savings ($2022 M)	
	Policy Scenario	Policy + B-VS Scenario
T035 - LSPower	2,866	3,240
T036 - NextEra Core 1	3,066	2,586
T040 - NextEra Core 5	3,101	2,731
T048 - Propel Base 2	2,065	2,033
T049 - Propel Base 3	2,141	2,801
T051 - Propel Alt 5	2,873	3,028
T052 - Propel Alt 6	2,909	3,081

Key Findings

- ✓ **The Long Island Public Policy Projects under the avoid cost assessment produce between $2B and $3.2B of avoided capital cost savings.** Projects that enable higher reductions in Long Island offshore wind curtailment and increase import capability to Long Island had the highest savings.

- ✓ **All projects analyzed create capital cost savings through the reduction in upstate solar capacity additions.** Of the total avoided capital cost savings analyzed the avoided solar capacity represented less than half of the total capital cost savings calculated for a majority of the projects.

- ✓ **All projects analyzed helped to increase the Long Island transmission security limit and reduced the capacity reserve margin for Long Island.** With a reduced capacity reserve margin in Zone K, DEFR capacity was sited in less costly upstate areas, which constituted over half of the total avoided capital cost savings.

3.9 Property Rights, Routing, Permitting, Construction and Design Review

Evaluation Metric: Property Rights & Risks to Project Completion

Purpose: Assesses potential issues associated with delay in constructing the proposed project and identifies major risks to project schedule and obtaining permits

Evaluation: SECO terrestrial and submarine cable analysis, substation and transmission line design verification, and the risk registry

Considerations:

- Lower cost and lower probability of occurrence if mitigation is required for an identified risk

The NYISO retained Substation Engineering Company (SECO) to review each proposed project's design, constructability, schedule, property rights and land requirements, and resiliency of the proposed substations to, among other things, identify risks. SECO was also tasked with identifying risks associated with potential environmental issues and associated delays in obtaining permits for construction and identifying potential construction delays due to design and permitting requirements.

SECO reviewed the development schedules for each proposed project submitted by the Developers. SECO's review focused on the proposed duration of the tasks in the Developer's project schedules instead of specific dates. SECO performed its evaluation by developing independent estimates of time for each project schedule and comparing it to the Developer's proposed duration of each task. The main drivers to the project schedule durations considered are:

- Article VII licensing effort,
- Procurement of major equipment,
- Real estate requirements, and
- Construction requirements

SECO also estimated a "minimum duration" using the anticipated time for Article VII application preparation, the anticipated time Article VII approval process, and the anticipated time to construct for each project. The minimum durations for each proposed project assume that preparation of the Article VII application will begin following the NYISO's selection of the more efficient or cost-effective solution and that any preliminary work required has already been completed by the Developer prior to that date. SECO also assumed that work to file the first Environmental Management and Construction Plan (EM&CP)

segment will be completed prior to receipt of certificate of environmental compatibility and need pursuant to Article VII.

Figure 34 below shows the estimated minimum duration for each proposed project. Based on SECO's independent evaluation, the overall construction schedule for each project appears adequate.

Figure 34: Estimated Minimum Duration for Project Development

Projects	Developer Proposed Total Duration	Estimated Minimum Duration
T035 – LS Power	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 Base 1	72 Months	77 Months
T048 – Propel Base 2	72 Months	77 Months
T049 – Propel Base 3	72 Months	77 Months
T051 – Propel Alt 5	72 Months	77 Months
T052 – Propel Alt 6	72 Months	77 Months
T053 – Propel Alt 7	96 Months	101 Months

In assessing the potential risks for each proposed project, SECO's evaluation also included site review and "walk down" of proposed sites and routes and reviewing feasibility and completeness of the proposed project schedules and sequencing plans. Environmental and permitting requirements for the proposed projects, as proposed by the Developers, were identified predominately using "desktop" analysis. SECO's evaluation does not represent an exhaustive list of all potential issues with each proposed project. The evaluation is intended to identify significant, foreseeable risks based on upon a reasonable evaluation of the proposed projects and is not intended to identify unforeseeable conditions that can only be discovered through detailed engineering, subsurface investigation, and construction or conditions that may be imposed by federal, state, or local authorities unique the project or affected locales. The independent cost estimates in Section 3.1 and the minimum schedule review in Figure 34 are based upon evaluating the projects, as proposed, and are not projections of final project costs to ratepayers or actual in-service dates. The risks identified by SECO indicate factors that could increase project cost or time to construct based on

information reasonably available at this stage. This evaluation is used to compare the relative foreseeable risks for each project. It is not intended to capture all obstacles or modifications the project may encounter in the permitting process prior to going in-service.

SECO's evaluation identified both common risks among some or all of the projects and project-specific risks. The risks have been broadly classified into four categories: (1) Property, Routes and Siting Concerns, (2) Construction and Operational Concerns, (3) Environmental and Permitting Concerns, and (4) Design Concerns.

In assessing the availability of real property rights for each proposed project, the NYISO relied on SECO, along with the factual information provided by the Transmission Owners in the applicable Transmission Districts, if available. The NYISO and SECO also reviewed transmission routing studies provided by Developers that identified potential routing alternatives and land-use or environmentally sensitive areas, such as wetlands, agriculture, and residential areas. The evaluation assesses, identifies, and ranks the risks for each of the above-listed categories. The relative scores for each project are then plotted on a heat map with the total probability score plotted against the total schedule plus cost scores. The heat map provides a comparative view of the risks among projects.

Figure 35: Cost and Schedule Risk

Probability Risk Will Occur	Low (L)	Medium (M)	High (H)	Very High (VH)
Very High (VH)				T043, T044
High (H)			T037, T038, T041	T039, T042
Medium (M)		T053	T036, T040	
Low (L)		T035, T047,T048, T049, T051, T052		

Cost and Schedule Risk

The most significant risks are summarized below.

3.9.1 Property Rights, Routes, and Siting

SECO reviewed the proposed routing of the transmission lines and siting of substations to evaluate the risks associated with each Developer's property acquisition plans and to identify site concerns and land

requirements. All Developers propose to site substations (including substation expansions) on either privately owned land parcels or on utility-owned property. All Developers have documented plans to obtain site control. However, if negotiations with the incumbent Transmission Owners or the private landowners are unsuccessful, all Developers have asserted that they have or would obtain authority to condemn property under New York State law following the PSC's certification of their proposed routes.

A summary of the key risks identified for each Developer is listed below:

LS Power

Proposal T035 – Atlantic Gateway

- Ruland Road Substation: The Transmission Owner that owns the real property that LS Power proposes to construct a substation noted its plans to use a portion of the available property at the site to accommodate a planned facility. LS Power will need to coordinate with the Transmission Owner for the precise location of the proposed substation and potentially modify their layout, if needed.

NextEra

Proposals T036, T037, T038, T039, T040, T041, T042, T043, T044 – Core 1-7 and Enhanced 1 & 2

- Hempstead Harbor: The proposed location of the transition station for the submarine cables coming ashore at Tappen Beach is at an existing National Grid gas regulator station.

Propel NY

Proposals Alternate Solutions 6 & 7

- Eastern Queens Substation: Sufficient land may not be available at the proposed site for the construction of the proposed substation.

3.9.2 Environmental and Permitting

SECO performed a comprehensive review of the proposed transmission routes, substation land parcels, and the design of each project to identify potential concerns/issues for reasonably foreseeable environmental and permitting requirements.

A summary of the key risks identified is listed below:

NextEra

Proposals T036, T037, T038, T039, T040, T041, T042, T043, T044 – Core 1-7 and Enhanced 1 & 2

- Sprain Brook Substation: The proposed 345 kV air-insulated bay addition will require a very large and complex retaining wall to accommodate the 60'-90' drop-off. Obtaining permits is expected to be difficult.

- Cable Transition Substations: The proposed locations where the submarine cables are coming ashore are in sensitive areas, such as parks. Construction of transition substations in these areas will have significant visual impact and are expected to be subject to public opposition that could require relocation of the proposed site away from those sensitive areas.

Proposals T039, T042, T043, T044 – Core 4, 7 and Enhanced 1 & 2

- Hudson River Routing:
    a. There are a large number of existing pipelines/cables (i.e., Lower New York Bay Lateral Pipeline, multiple Narrows Cables/Pipeline Areas, Neptune Transmission, Bayonne Energy Center, 3 Cross Hudson Pipelines, and a large number of telecom cables) that must be crossed. Owner's approval to cross these may be required. Failure to get owner approval could result in the proposed route being feasible.
    b. The seafloor sediments in the areas surrounding Long Island and New York City contain known areas of contamination. This area is considered a Federal and New York State Superfund Site due to as a result of PCB contamination. Agencies are expected to avoid and reroute projects around areas of high contamination to avoid disturbance.
    c. Hudson River tunnels, including the Lincoln, Holland/NJ Transit and multiple PATH tunnels, will need to be crossed. MTA, Port Authority of NY/NJ, and potential other owners are likely to require permission to cross this infrastructure. There does not appear to be much of a precedent for crossing these tunnels with linear infrastructure.
- Farragut Substation: Desktop analysis concluded that the proposed expansion of the existing Farragut substation into the East River could be prohibited based on NYC's construction standard. Development of a pier in this area will likely require a variance from the Board of Standards and Appeals.
- East River Routing: Routes cross five subway tunnels and the Battery Tunnel. MTA, Port Authority of NY/NJ, and potential other owners are likely to require permission to cross these pieces of infrastructure. There does not appear to be much of a precedent for crossing these tunnels with linear infrastructure. This routing may not be feasible if owners do not allow permission to cross. In addition, the East River has potential shallow bedrock and the tunnels—some of which are very old and shallow. This could add further complications to crossing these tunnels. If proper burial depths cannot be reached while crossing, armoring of the lines could be logistically challenging given some of the tunnels' ages.

Propel NY

Proposal T053 Alternate Solution 7

- Northport: The Developer proposes to locate the new HVDC converter station at Northport on land that houses a large above-ground fuel storage tank. A full environmental survey prior to construction will be required to ensure there is no soil contamination. The need to address the contamination could impact cost and schedule.

3.9.3 Design Concern

NextEra

Proposals T036, T037, T038, T039, T040, T041, T042, T043, T044 – Core 1-7 and Enhanced 1&2

- Jamaica Substation (all NextEra projects) and Farragut Substation (T037, T038, T039, T043 and T044): The proposed design does not comply with Con Edison's design principle and engineering specifications.
- Dunwoodie Substation: The proposed location for the new 345 kV GIS substation is in the right-of-way for three 345 kV transmission lines. Due to the low clearances of the transmission lines, it will be very difficult to transition the lines to underground cables while meeting the system outage and restoration requirements.

Propel NY

Proposals T047, T048, T049, T051, T052, T053 – Base Solutions 1-3 and Alternate Solutions 5-7

- Tremont Substation: The construction of the proposed Network Upgrade Facilities (NUF) will require an extensive outage of the two transformers and the line (X28).

3.9.4 Construction

SECO reviewed the substation design and transmission routes provided by the Developers to identify potential concerns associated with construction of the proposed projects.

A summary of the key risks identified is listed below:

LS Power

Proposal T035 – Atlantic Gateway

- Subsurface Condition: Approximately 50% of the proposed site for the Northgate substation could encounter rock during excavation, and the site might require extensive slope protection. Access to the site will be difficult due to the terrain and rock condition. In addition, the proposed installation for transition from overhead to GIS will require outages of lines to Pleasant Valley (W80, W81) and Buchanan (W97, W98) for extended periods of time.
- Long Lead Time: Due to high demand and equipment complexities, manufacturers are quoting lead times up to 4 years for onshore HVDC equipment. With three units being installed, it could take an additional six months for the second unit and another six months for the third unit to be installed, tested, and commissioned.
- Road Closure During Construction: Construction of the underground cables near the Port Chester and Cold Harbor Spring landing site may require road closures of that could eliminate the only access to homes and businesses.

NextEra

All NextEra Proposals

- Road Closure during construction: Construction of the underground cables near the Davenport Park transition station may require road closures that could eliminate access to homes on the peninsula.

Proposals T041, T042, T043, T044 – Core 6, 7 and Enhanced 1&2

- Long Lead Time: Due to high demand and equipment complexities, manufacturers are quoting lead times up to four years for onshore HVDC equipment. Additional six months may be needed to install, test, and commission a second unit.

Propel NY

Proposals T053 – Alternate Solutions 7

- Long Lead Time: Due to high demand and equipment complexities, manufacturers are quoting lead times up to four years for onshore HVDC equipment.

Key Findings

- ✓ **There are significant permitting and constructability risks for the NextEra projects that connect to the existing Farragut substation or have submarine cables routed through New York Harbor and the Hudson River.**
- ✓ **Connections to the existing Sprain Brook substation will require significant site work, especially for the NextEra projects that propose to expand to the east side of the substation.** Additional transmission outage risks have been identified for the LS Power project's connection to the existing Millwood substation, NextEra projects that propose to connect to the existing Dunwoodie substation, and the Propel NY projects that propose to connect to the existing Tremont substation.
- ✓ **Specific risks identified for terrestrial cable routes will be addressed during the detailed design and permitting process.** Submarine landing and transition substation locations are a higher risk.
- ✓ **HVDC facilities have additional risks due to the long procurement times and large footprints of the converter stations near Northport, Ruland Road, and Millwood.**
- ✓ **Required NUFs and their final design will be identified through the Transmission Interconnection Procedures.**
- ✓ **Given the complexity of the proposed projects, detailed design and permitting processes may identify additional risks and issues impacting cost and schedule of the projects.**

3.10 Interconnection Studies

In addition to the specific analysis conducted to evaluate the various metrics, the Public Policy Process will give due consideration to the status and results of any available NYISO-conducted interconnection studies in evaluating and selecting the more efficient or cost-effective solution. All of the proposed projects that the NYISO found to be viable and sufficient to satisfy the Long Island PPTN are currently under evaluation in their respective System Impact Study (SIS) in the NYISO's Transmission Interconnection Procedures. Figure 36 shows the interconnection queue numbers for all the proposed projects.

Figure 36: Project Interconnection Queue Numbers

Project	Interconnection Queue #
T035 - LSPower	Q1271
T036 - NextEra Core1	Q1278
T037 - NextEra Core 2	Q1279
T038 - NextEra Core 3	Q1280
T039 - NextEra Core 4	Q1281
T040 - NextEra Core 5	Q1282
T041 - NextEra Core 6	Q1283
T042 - NextEra Core 7	Q1284
T043 - NextEra Enh 1	Q1285
T044 - NextEra Enh 2	Q1286
T047 - Propel Base 1	Q1276
T048 - Propel Base 2	Q1274
T049 - Propel Base 3	Q1277
T051 - Propel Alt 5	Q1289
T052 - Propel Alt 6	Q1290
T053 - Propel Alt 7	Q1291

The independent cost estimates include all the preliminary costs for the NUFs identified by the NYISO. The cost estimate for the NUFs will be updated, as necessary, from the ongoing SIS. The detailed design and cost estimates for the NUFs will be finalized in the Facilities Studies for the selected project. Physical feasibility and design concerns of the point of interconnection for a proposed project, as identified in the ongoing SIS, have been included in the Property Rights, Routing, Permitting, Construction and Design review. Details of project specific risks and concerns can be found in the risk register.

3.11 Consequences for Other Regions

In addition to its evaluation to identify the more efficient or cost-effective solution to the Long Island PPTN, the NYISO also coordinates with neighboring regions to identify the consequences, if any, of the proposed transmission solutions on the neighboring regions using the respective planning criteria of such regions.

Through the NYISO's Transmission Interconnection Procedures and the associated SIS currently in progress, the NYISO is consulting with PJM and ISO-NE concerning any potential impacts due to the proposed projects. Preliminary results from the SIS have not identified any system upgrades that may be required in neighboring systems. The NYISO also discussed the proposed projects and any anticipated regional impacts with PJM and ISO-NE through the Joint ISO/RTO Planning Committee.

3.12 Impact on Wholesale Electricity Markets

The NYISO evaluates the impact of proposed viable and sufficient Public Policy Transmission Projects on its wholesale electricity markets, using economic metrics including change in production cost, congestion, and load payments.[13] Based on the transfer and production cost analysis results described in Sections 3.3 and 3.6, the proposed transmission projects increase Long Island import and export capability and reduce congestion. Therefore, the NYISO staff has determined that the viable and sufficient Public Policy Transmission Projects proposed to address the Long Island PPTN will have no adverse impact on the competitiveness of the New York wholesale electricity markets. Rather, the transmission projects all tend to improve the competitiveness of the NYISO's markets by increasing system transfer capability and allowing more resources and suppliers to compete to serve loads. The review from the NYISO's Market Monitoring Unit is included in Appendix C.[14]

3.13 Evaluation of Interaction with Local Transmission Owner Plans

In its Public Policy Process, the NYISO is required to review the Local Transmission Owner Plans (LTPs)[15] as they relate to the Bulk Power Transmission Facilities (BPTF) to determine whether any proposed regional Public Policy Transmission Project on the BTPF can (1) more efficiently or cost-effectively satisfy any local needs driven by a Public Policy Requirement identified in the LTPs or (2) might more efficiently or cost-effectively satisfy the identified regional Public Policy Transmission Needs than any local transmission solutions driven by Public Policy Requirements identified in the LTPs.

The Transmission Owners' current LTPs have not identified any needs driven by a Public Policy Requirement in New York State. Accordingly, the NYISO determined that there are no proposed regional Public Policy Transmission Projects that could more efficiently or cost-effectively satisfy a need driven by a Public Policy Requirement identified in an LTP. In the absence of any public policy needs in the LTPs, it is also not necessary for the NYISO to determine whether a regional transmission project would more efficiently or cost-effectively satisfy such a transmission need on the BPTF than a local transmission solution.

[13] *See* OATT Sections 31.4.10 and 31.4.8.1.9.
[14] *See* OATT Section 31.4.11.1 (The draft report will be provided to the Market Monitoring Unit for its review and consideration).
[15] *See* OATT Section 31.2.1.1.2.1

4. Recommendations

4.1 Summary of Project Evaluations

The project evaluations are summarized in this section based on their individual performance. Below is a brief summary of the key design differences and the highlighted evaluation results for each project.

T035: LS Power

- The Developer proposes a hard Cost Cap of $3,074M with a commitment to not recover the Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $3,152M. However, the independent cost estimate for Included Capital Costs is $5,920M, which is significantly higher than the submitted Cost Cap.
- LS Power's hard Cost Cap proposal provides significant protection to consumers; however, the project is expected to cost significantly more than the $3.1 billion Cost Cap, which the Developer could seek to recover some of the costs above the Cost Cap at FERC.
- Good operability range, expandability, and transfer capability.
- This unique design would introduce operational complexities based on the need to actively control the HVDC and manage flow on the weaker parallel AC system in response to variability on the future Long Island grid. Restrictions on HVDC transmission operations would be necessary with high offshore wind variability as offshore wind installations increase.
- Highest resiliency score based on substation design.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Addresses the existing Barrett-Valley Stream 138 kV constraint and could lead to high production cost savings and unbottling of more offshore wind generation.
- Low property and constructability risks with notable risks related to HVDC equipment procurement and the proposed Northgate substation.

T036: NextEra Core 1

- The Developer proposes a soft Cost Cap of $5,882M with a commitment to not recover 50% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $7,019M. The independent cost estimate for Included Capital Costs is $3,230M and significantly lower than the submitted Cost Cap.
- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.

- Does not address the existing Barrett–Valley Stream 138 kV constraint.
- Medium property and constructability risks with notable risks related to the proposed expansion of the existing Dunwoodie, Sprain Brook, and Jamaica substations.

T037: NextEra Core 2

- The Developer proposed a soft Cost Cap of $6,867M with a commitment to not recover 50% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $8,126M. The independent cost estimate for Included Capital Costs is $3,627M and significantly lower than the submitted Cost Cap.
- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Does not address the existing Barrett–Valley Stream 138 kV constraint.
- High property and constructability risks with notable risks related to the proposed expansion of the Farragut, Dunwoodie, Sprain Brook, and Jamaica substations.

T038: NextEra Core 3

- The Developer proposed a soft Cost Cap of $7,444M with a commitment to not recover 50% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $8,653M. The independent cost estimate for Included Capital Costs is $4,252M and significantly lower than the submitted Cost Cap.
- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Does not address the existing Barrett–Valley Stream 138 kV constraint.
- High property and constructability risks with notable risks related to the proposed expansion of the existing Farragut, Dunwoodie, Sprain Brook, and Jamaica substations.

T039: NextEra Core 4

- The Developer proposed a soft Cost Cap of $7,211M with a commitment to not recover 50% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $8,483M. The independent cost estimate for Included Capital

Costs is $4,457M and significantly lower than the submitted Cost Cap.

- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Does not address the existing Barrett–Valley Stream 138 kV constraint.
- High property and constructability risks with notable risks related to the proposed expansion of the existing Farragut, Dunwoodie, Sprain Brook, and Jamaica substations and the proposed routing of submarine cables through Hudson River.

T040: NextEra Core 5

- The Developer proposed a soft Cost Cap of $5,898M with a commitment to not recover 50% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $6,984M. The independent cost estimate for Included Capital Costs is $3,610M and significantly lower than the submitted Cost Cap.
- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Does not address the existing Barrett–Valley Stream 138 kV constraint.
- Medium property and constructability risks with notable risks related to the expansion of the existing Dunwoodie, Sprain Brook, and Jamaica substations.

T041: NextEra Core 6

- The Developer proposed a soft Cost Cap of $6,774M with a commitment to not recover 50% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $7,912 M. The independent cost estimate for Included Capital Costs is $4,448M and significantly lower than the submitted Cost Cap.
- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Does not address the existing Barrett–Valley Stream 138 kV constraint.

- High property and constructability risks with notable risks related to the proposed expansion of the existing Dunwoodie, Sprain Brook, and Jamaica substations, and HVDC equipment procurement lead time and converter space requirements.

T042: NextEra Core 7

- The Developer proposed a soft Cost Cap of $10,373M with a commitment to not recover 50% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $13,192M. The independent cost estimate for Included Capital Costs is $13,750M and significantly higher than the submitted Cost Cap.
- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability and transfer capability, with excellent expandability with connector to an offshore wind lease area.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Does not address the existing Barrett–Valley Stream 138 kV constraint.
- High property and constructability risks with notable risks related to the proposed expansion of the existing Dunwoodie, Sprain Brook, and Jamaica substations, HVDC equipment procurement lead time, and the routing of submarine cables through Hudson River.

T043: NextEra Enhanced 1

- The Developer proposed a soft Cost Cap of $11,471M with a commitment to not recover 50% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $12,769M. The independent cost estimate for Included Capital Costs is $8,753M and significantly lower than the submitted Cost Cap.
- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability and transfer capability, with excellent expandability.
- Better production cost benefits in Baseline and Policy Scenarios.
- Addresses the existing Barrett–Valley Stream 138 kV constraint.
- Very High property and constructability risks with notable risks related to the proposed expansion of the existing Farragut, Dunwoodie, Sprain Brook, and Jamaica substations, HVDC equipment procurement lead time, and the routing of submarine cables through Hudson River.

T044: NextEra Enhanced 2

- The Developer proposed a soft Cost Cap of $14,991M with a commitment to not recover 50% of

Included Capital Costs above the cap from ratepayers.

- The total calculated cost estimate is $16,898M—the highest cost among the proposed projects. The independent cost estimate for Included Capital Costs is $16,128M and slightly higher than the submitted Cost Cap.
- NextEra's proposed 50/50 Cost Cap provides decent protection to consumers; however, such protection is offset by the significant difference between the amount of the Cost Caps and the independent consultant estimates for its projects.
- Good operability and transfer capability, with excellent expandability with connector to offshore wind lease area.
- Better production cost benefits in Baseline and Policy Scenarios.
- Partially addresses the existing Barrett–Valley Stream 138 kV constraint.
- Very High property and constructability risks with notable risks related to the proposed expansion of the existing Farragut, Dunwoodie, Sprain Brook, and Jamaica substation, HVDC equipment procurement, and the routing of submarine cables through Hudson River.

T047: Propel Base Solution 1

- The Developer proposed a soft Cost Cap of $1,877M with a commitment to not recover 20% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $2,480M. The independent cost estimate for Included Capital Costs is $2,269M and slightly higher than the submitted Cost Cap.
- Propel NY's proposed 20/80 Cost Cap provides the minimum protection to consumers under the tariff. Generally, the lower protections from the 20/80 Cost Cap are mitigated by the lower estimated cost of Propel NY's projects and, therefore, pose a lower proportional risk to consumers in the event of overruns compared to other more expensive projects.
- Fair operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Partially addresses the existing Barrett–Valley Stream 138 kV constraint; could lead to additional production cost savings; and could unbottle more offshore wind generation.
- Low property and constructability risks with notable risk factors related to property rights for the proposed East Garden City substation and the expansion of the Tremont substation to accommodate the proposed interconnection.

T048: Propel Base Solution 2

- The Developer proposed a soft Cost Cap of $1,687M with a commitment to not recover 20% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $2,121M—the lowest cost among the proposed projects. The independent cost estimate for Included Capital Costs is $1,966M and slightly higher than the

submitted Cost Cap.

- Propel NY's proposed 20/80 Cost Cap provides the minimum protection to consumers under the tariff. Generally, the lower protections from the 20/80 Cost Cap are mitigated by the lower estimated cost of Propel NY's projects and, therefore, pose a lower proportional risk to consumers in the event of overruns compared to other more expensive projects.
- Fair operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Partially addresses the existing Barrett–Valley Stream 138 kV constraint; could lead to additional production cost savings; and could unbottle more offshore wind generation.
- Low property and constructability risks with notable risk factors related to the expansion of the Tremont substation to accommodate the proposed interconnection.

T049: Propel Base Solution 3

- The Developer proposed a soft Cost Cap of $2,131M with a commitment to not recover 20% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $2,835M. The independent cost estimate for Included Capital Costs is $2,642M and moderately higher than the submitted Cost Cap.
- Propel NY's proposed 20/80 Cost Cap provides the minimum protection to consumers under the tariff. Generally, the lower protections from the 20/80 Cost Cap are mitigated by the lower estimated cost of Propel NY's projects and, therefore, pose a lower proportional risk to consumers in the event of overruns compared to other more expensive projects.
- Fair operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Addresses the existing Barrett–Valley Stream 138 kV constraint; could lead to high production cost savings; and could unbottle more offshore wind generation.
- Low property and constructability risks with notable risk factors related to property rights for the East Garden City substation and the expansion of the Tremont substation to accommodate the proposed interconnection.

T051: Propel Alternate Solution 5

- The Developer proposed a soft Cost Cap of $2,554M with a commitment to not recover 20% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $3,262M. The independent cost estimate for Included Capital Costs is $2,902M and slightly higher than the submitted Cost Cap.
- Propel NY's proposed 20/80 Cost Cap provides the minimum protection to consumers under the tariff. Generally, the lower protections from the 20/80 Cost Cap are mitigated by the lower estimated cost of Propel NY's projects and, therefore, pose a lower proportional risk to consumers

in the event of overruns compared to other more expensive projects.

- Average operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Partially addresses the existing Barrett–Valley Stream 138 kV constraint; could lead to additional production cost savings; and could unbottle more offshore wind generation.
- Low property and constructability risks with notable risk factors related to property rights for the East Garden City substation and the expansion of the Tremont substation to accommodate the proposed interconnection.

T052: Propel Alternate Solution 6

- The Developer proposed a soft Cost Cap of $3,953M with a commitment to not recover 20% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $4,705M. The independent cost estimate for Included Capital Costs is $4,071M and slightly higher than the submitted Cost Cap.
- Propel NY's proposed 20/80 Cost Cap provides the minimum protection to consumers under the tariff. Generally, the lower protections from the 20/80 Cost Cap are mitigated by the lower estimated cost of Propel NY's projects and, therefore, pose a lower proportional risk to consumers in the event of overruns compared to other more expensive projects.
- Good operability, expandability, and transfer capability.
- Comparable production cost benefits in Baseline and Policy Scenarios.
- Partially addresses the existing Barrett–Valley Stream 138 kV constraint; could lead to additional production cost savings; and could unbottle more offshore wind generation.
- Medium property and constructability risks with notable risk factors related to property rights for the East Garden City and Eastern Queens substations and the expansion of the Tremont substation to accommodate the proposed interconnection.

T053: Propel Alternate Solution 7

- The Developer proposed a soft Cost Cap of $5,118M with a commitment to not recover 20% of Included Capital Costs above the cap from ratepayers.
- The total calculated cost estimate is $5,576M. The independent cost estimate for Included Capital Costs is $5,113M and slightly higher than the submitted Cost Cap.
- Propel NY's proposed 20/80 Cost Cap provides the minimum protection to consumers under the tariff. Generally, the lower protections from the 20/80 Cost Cap are mitigated by the lower estimated cost of Propel NY's projects and, therefore, pose a lower proportional risk to consumers in the event of overruns compared to other more expensive projects.
- Fair operability, expandability, and transfer capability. Can accommodate higher offshore wind

amounts only if future offshore wind generators connect to Barrett.

- Comparable production cost benefits in Baseline and Policy Scenarios.
- Partially addresses Barrett–Valley Stream constraint and could lead to additional production cost savings and unbottle more offshore wind generation.
- Medium property and constructability risks with notable risk factors related to property rights for the East Garden City and Eastern Queens substations, the expansion of the Tremont substation to accommodate the proposed interconnection, and HVDC equipment procurement lead time and converter space requirements.

Figure 37 summarizes the metric evaluation for the projects.

Figure 37: Summary of Metric Evaluation

Project	Routing, Permitting, Construction		Capital Cost Estimates	Expandability		Operability:			Cost per MW:			Performance:		Production Cost		Capacity Savings
						Two Outages (Policy Case)			Two Outages			20-year OSW Unbottling		20-year Savings		
	Severity of Risk	Probability of Risk	Total Cost ($M)	OSW Capability - Light Load (MW)	Additional POIs	Import (MW)	Export (MW)	Range (MW)	Import ($M/MW)	Export ($M/MW)	Range ($M/MW)	Policy Case (TWh)	B-VS Sensitivity (TWh)	Policy Case ($M)	B-VS Sensitivity ($M)	Annual ICAP Savings ($M)
T035 - LS Power	Med	Low	$3,152	4,350	3	2,540	1,355	3,895	$1.24	$2.33	$0.81	27.4	55.4	$340	$906	$65.85
T036 - NextEra Core 1	High	Med	$7,019	4,450	13	2,400	1,540	3,940	$2.92	$4.56	$1.78	29	20.2	$303	$291	$54.98
T037 - NextEra Core 2	High	High	$8,126	4,150	13	2,535	1,725	4,260	$3.21	$4.71	$1.91	28.8	21.4	$364	$378	$97.25
T038 - NextEra Core 3	High	High	$8,653	4,600	16	3,035	2,385	5,420	$2.85	$3.63	$1.60	30.5	23.6	$380	$402	$116.35
T039 - NextEra Core 4	Very High	High	$8,483	4,400	16	3,060	1,510	4,570	$2.77	$5.62	$1.86	30.3	22.1	$305	$307	$29.28
T040 - NextEra Core 5	High	Med	$6,984	4,375	17	3,035	1,530	4,565	$2.30	$4.56	$1.53	30.1	21.8	$339	$332	$29.28
T041 - NextEra Core 6	High	High	$7,912	4,475	15	3,000	1,530	4,530	$2.64	$5.17	$1.75	30.5	23.3	$291	$308	$34.80
T042 - NextEra Core 7	Very High	High	$13,193	4,500	17	3,005	1,535	4,540	$4.39	$8.59	$2.91	30.5	23.3	$291	$308	$34.80
T043 - NextEra Enhanced 1	Very High	Very High	$12,769	5,400	8	3,280	2,510	5,790	$3.89	$5.09	$2.21	31.5	41.4	$458	$745	$120.40
T044 - NextEra Enhanced 2	Very High	Very High	$16,898	4,900	13	3,275	2,465	5,740	$5.16	$6.86	$2.94	31.5	34	$441	$582	$105.90
T047 - Propel Base 1	Med	Low	$2,480	3,750	1	1,635	625	2,260	$1.52	$3.97	$1.10	29.2	34.7	$337	$568	$112.85
T048 - Propel Base 2	Med	Low	$2,121	3,725	1	1,660	510	2,170	$1.28	$4.16	$0.98	25.4	31.3	$313	$513	$113.35
T049 - Propel Base 3	Med	Low	$2,835	3,750	0	1,610	660	2,270	$1.76	$4.30	$1.25	29.5	54.3	$344	$902	$112.85
T051 - Propel Alt 5	Med	Low	$3,262	4,300	1	2,320	1,190	3,510	$1.41	$2.74	$0.93	30.6	38.4	$341	$609	$113.73
T052 - Propel Alt 6	Med	Low	$4,705	5,075	0	2,815	2,400	5,215	$1.67	$1.96	$0.90	30.7	38.3	$352	$618	$94.90
T053 - Propel Alt 7	Med	Med	$5,576	4,350	1	3,150	905	4,055	$1.77	$6.16	$1.38	30.3	37.7	$360	$622	$97.03

4.2 Top-Tier Projects

The NYISO evaluated all viable and sufficient Public Policy Transmission Projects for each metric set forth in the OATT and identified in the PSC Order for the Long Island PPTN. The NYISO then compared the results for the projects against each other to identify the major performance and risk differences. Based on consideration of all metrics and the comparison of the projects' performance relative to each other, the NYISO identified seven projects as the top-tier projects that warrant further, focused analysis to effectively distinguish them from each other and determine a final ranking. The top-tier projects include, in no particular order:

- T035 LS Power,
- T036 NextEra Core 1,
- T040 NextEra Core 5,
- T048 Propel Base 2,
- T049 Propel Base 3,
- T051 Propel Alternate 5, and
- T052 Propel Alternate 6.

The NYISO observed some key considerations in identifying the projects in the top tier. For a project with high or very high risks in construction, property rights, or permitting risks, the other benefits provided by the projects, such as expandability, operability, and performance, were not substantial enough to overcome the project risks relative to other projects. T035 is included in the top tier due to its low routing, permitting, and construction risks when compared to other projects and its performance across several metrics.

T036 NextEra Core 1 and T040 NextEra Core 5 projects are included in the top tier because they propose four new Long Island tie lines and rank high in the expandability and operability metrics. T048 Base Solution 2 is the least cost solution and, therefore, is included in the top tier. T047 Base Solution 1 and T049 Base Solution 3 each perform similarly across several metrics, but T049 is included in the top tier because it addresses the transmission constraints on the Barrett – Valley Stream 138 kV paths near Empire Wind II. T051 Propel Alternate 5 and T052 Propel Alternate 6 have higher expandability, operability, and performance results than smaller projects and, therefore, are included in the top tier. T053 Propel Alternate 7 is not included in the top tier due to unique risk factors and dependence on future offshore wind projects interconnecting at a single substation.

4.3 Ranking

The NYISO conducted further evaluation of the top-tier projects in performing sensitivity analysis for the capacity savings, performance, and operability and in assessing the qualitative nature of the Developers' proposed Cost Caps and to further distinguish the projects' satisfaction of these metrics. The following figures summarize the project specific economic benefits (e.g., production cost savings and avoided capital cost benefits) versus the capital costs for the top-tier projects.

Figure 38: Policy Scenario Summary of Benefits vs. Costs

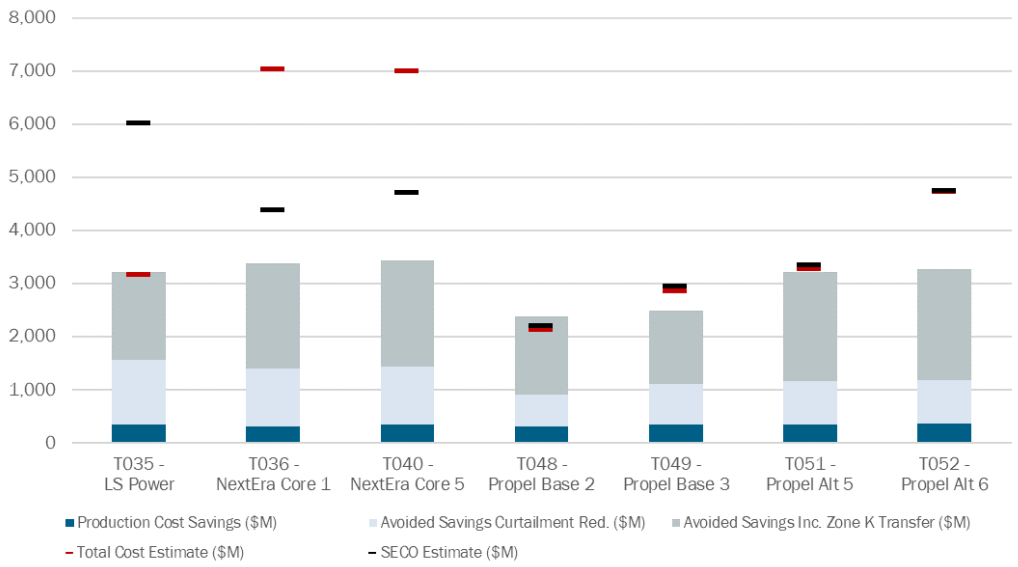
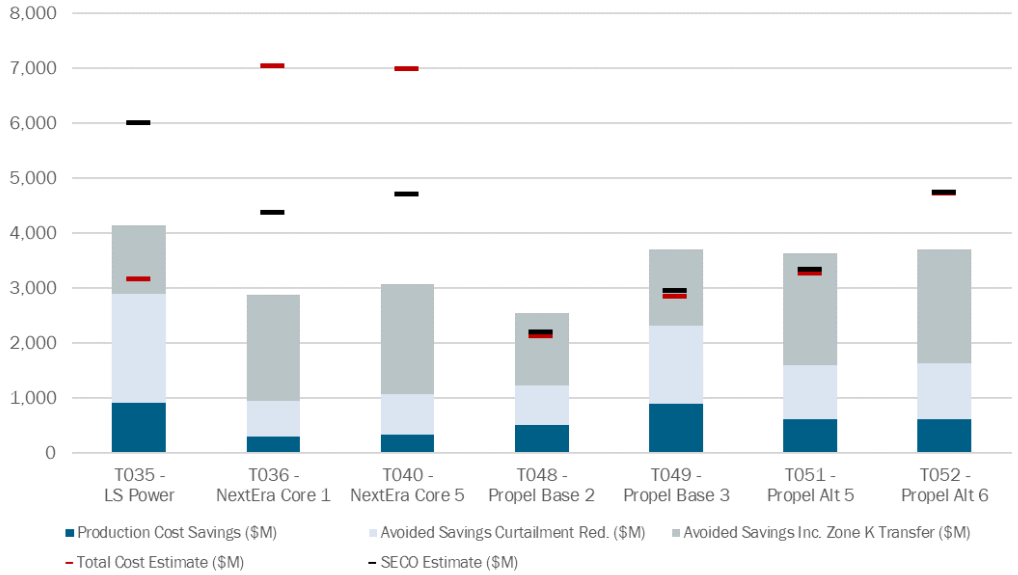


Figure 39: Policy + B-VS Scenario Summary of Benefits vs. Costs



Based on consideration of all the evaluation metrics described in Section 3 and detailed throughout this report and appendices, together with inputs from stakeholders and the New York State Department of Public Service (DPS), NYISO staff ranks the projects as shown in Figure 40.

Figure 40: Project Ranking

Ranking	Project ID	Developer	Project Name
1	T051	Propel NY	Alternate Solution 5
2	T049	Propel NY	Base Solution 3
3	T052	Propel NY	Alternate Solution 6
4	T035	LS Power	Atlantic Gateway
5	T048	Propel NY	Base Solution 2
6	T040	NextEra	Core 5
7	T036	NextEra	Core 1
8	T047	Propel NY	Base Solution 1
9	T053	Propel NY	Alternate Solution 7
10	T041	NextEra	Core 6
11	T037	NextEra	Core 2
12	T038	NextEra	Core 3
13	T039	NextEra	Core 4
14	T043	NextEra	Enhanced 1
15	T042	NextEra	Core 7
16	T044	NextEra	Enhanced 2

Critical comparison of the projects is detailed below:

- T051 adds three new AC tie lines and additional facilities across Long Island that create significant transfer capability for imports and exports between Long Island and the rest of NYCA. The additional facilities within Long Island will effectuate the efficient transfer of power in the future, providing optionality for resource planning and expansion. With the new facilities, the project provides 1) effective operability under a variety of outage conditions, 2) low cost per MW for transfer capability, expandability, and operating range, and 3) lower project cost and risks than larger projects. The project also provides consistent economic benefits across various future scenarios.
- T049 adds two new AC tie lines and additional facilities across Long Island—one less tie line than T051 and a different build-out across Long Island. This smaller, lower-cost design relative to T051 results in less operability under outage conditions and higher cost per MW and has less ability to enable expansion of the Long Island resource mix in the future. However, the project is very effective in relieving congestion along the Barrett-Valley Stream paths.

- T052 adds four new AC tie lines to Long Island and additional facilities across Long Island. This larger, higher-cost design relative to T051 results in the greatest range of operability under outage conditions at a comparable cost per MW. However, larger ranges of operability come with greater cost and project risks than T051 without meaningful increases in offshore wind unbottling or economic benefits.
- T035 adds three new HVDC tie lines to Long Island with a few additional facilities in Long Island. This unique design would introduce operational complexities based on the need to actively control the HVDC and manage flow on the weaker parallel AC system in response to variability on the future Long Island grid. The range of operability under outage conditions is on par with T049 and quite limited when compared to T051 or T052. The project proposes a hard Cost Cap; however, the project is expected to cost significantly more than the $3.1 billion Cost Cap, which the Developer could seek to recover some of the costs above the Cost Cap at FERC.
- T048 adds two new AC tie lines and minimum build out within Long Island—one less tie line and significantly less build out across Long Island than T051. This minimal design results in the least operability range under outage conditions and higher cost per MW than T051. The project also has a lower ability to enable expansion of the Long Island resource mix in the future.
- T040 adds three new 345 kV AC tie lines and one new 138 kV AC tie line with additional facilities across Long Island. The project also proposes the most additional points of interconnection for future expansion among the top-tier projects. This design results in an operability range on par with T051 but with a significantly higher cost per MW compared to other top-tier projects. It also has significantly more project risks related to the expansion of the existing Dunwoodie, Sprain Brook, and Jamaica substations.
- T036 adds three new 345 kV AC tie lines and one new 138 kV AC tie line with additional facilities across Long Island. T036 costs slightly more than T040 without meaningful performance benefits or reduction in project risks.
- The projects not in the top tier were ranked largely based on their relative risks and costs. While some of these projects offered creative designs and performed well under several metrics, any benefits were outweighed by the high permitting and construction risks.

4.4 Selection Recommendation

Based on consideration of all the evaluation metrics for efficiency or cost-effectiveness described in Section 3, together with input from Developers, stakeholders, and DPS and performing a detailed comparative review among the projects based on the satisfaction of those metrics, the NYISO staff recommends that the NYISO Board of Directors select Propel NY's T051 Alternate 5 proposal as the more efficient or cost-effective transmission solutions to satisfy the Long Island PPTN for purposes of cost allocation and recovery under the OATT.

T051 is the lowest cost solution that offers expandability and operability benefits from three new AC tie lines from Long Island to the rest of the state. It has relatively low procurement, permitting, and construction risks compared to other projects, reducing the potential for increases to project cost and schedule. T051 adds a strong 345 kV backbone to the Long Island transmission system that not only allows the export of offshore wind power but also will help serve Long Island load with the future generation changes needed to meet the CLCPA. Compared to T049, T051 does not fully address congestion on the Barrett-Valley Stream path, but it has a third 345 kV AC tie line that provides optionality for resource planning and expansion. Furthermore, T051's potential economic benefits are expected to be comparable with the project cost.

4.5 Designation of Designated Public Policy Projects

Propel NY designed and proposed T051 in a manner where it includes both new facilities and upgrades to existing transmission facilities owned by incumbent transmission owners. While Propel NY is the sponsoring Developer of T051, the NYISO's tariff respects certain rights of the incumbent transmission owners to build, own, and recover the costs of upgrades to their existing facilities. Therefore, if the NYISO selects a solution as the more efficient or cost-effective solution to a Public Policy Transmission Need, the NYISO designates components of the selected project to the sponsoring Developer or the applicable transmission owner based on whether the facility is a new facility or a Public Policy Transmission Upgrade, respectively.[16] If designated, the party will become the Designated Entity and is responsible for building, owning, and recovering the costs of its Designated Public Policy Project.

Consistent with the NYISO's characterization of facilities contained in Appendix F, T051 is made up of four Designated Public Policy Projects. Propel NY is the Designated Entity for the Designated Public Policy Project set forth in Appendix O. The Long Island Power Authority (LIPA) is the Designated Entity for the Designated Public Policy Project set forth in Appendix P. The New York Power Authority (NYPA) is the

[16] Under the tariff, a Public Policy Transmission Upgrade is defined as "[a]ny portion(s) of a Public Policy Transmission Project that satisfies the definition of upgrade in Section 31.6.4 of this Attachment Y."

Designated Entity for the Designated Public Policy Project set forth in Appendix Q. Consolidated Edison of New York, Inc. (Con Edison) is the Designated Entity for the Designated Public Policy Project set forth in Appendix R.

The Required Project In-Service Date for the selected project is May 2030 to satisfy the Long Island PPTN. Additional details related to each Designated Public Policy Project and any required in-service date specific to a component of a Designated Public Policy Project, if any, are set forth in Appendices O, P, Q, and R.

LIPA, NYPA, and Con Edison will have 30 days from the posting of the final report to inform the NYISO if they do not intend to serve as the Designate Entity for their respective Designated Public Policy Project. In the event that LIPA, NYPA, or Con Edison refuses to serve as the Designated Entity for one or more of the Public Policy Transmission Upgrades, Propel NY, as the sponsoring Developer, will be identified as the Designated Entity for the rejected facilities. The final list of Designated Public Policy Projects and the responsible Designated Entities will be posted to the NYISO's website following the conclusion of the 30-day notification period.

Exhibit No. TRANSCO-105

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of Albany on May 12, 2022

COMMISSIONERS PRESENT:

Rory M. Christian, Chair
Diane X. Burman, dissenting
James S. Alesi
Tracey A. Edwards
John B. Howard, dissenting
David J. Valesky
John B. Maggiore

CASE 20-E-0497 - In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2020.

CASE 18-E-0623 - In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2018.

ORDER ON PETITIONS FOR REHEARING

(Issued and Effective May 16, 2022)

BY THE COMMISSION:

INTRODUCTION

On March 19, 2021, the Public Service Commission (Commission) issued an "Order Addressing Public Policy Requirements for Transmission Planning Purposes" (March 2021 Order) in the above-referenced cases, addressing the Public Policy Requirements proposed by several entities as part of the biennial Public Policy Transmission Planning Process specified under Attachment Y of the Open Access Transmission Tariff (OATT) adopted by the New York Independent System Operator, Inc.

(NYISO).[1] Through the March 2021 Order, the Commission found that the Climate Leadership and Community Protection Act (CLCPA) is driving the need for additional transmission facilities between Long Island and New York City, and therefore constitutes a Public Policy Requirement.[2] The Commission noted that at least 3,000 megawatts (MW) of offshore wind are expected to be interconnected onto Long Island, which "illustrates an impending [transmission] need for upgrades to onshore transmission facilities to assure that the offshore wind energy expected to be injected into New York City and Long Island can be distributed to the State at large."[3]

As authorized under the OATT, the Commission also identified a preferred cost allocation approach as follows:

> [T]he NYISO should apply the "beneficiaries pay principle," and take into account the economic benefits associated with congestion relief and assign a 75% portion of the project(s) costs to the beneficiaries. However, the remaining portion of the costs should be allocated on a load-ratio share statewide given that increased access to renewables will reduce emissions and thus provide benefits statewide, consistent with the CLCPA's objectives.[4]

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[1] The capitalized terms used above are defined in the NYISO's OATT, Attachment Y, §31.1.1. The NYISO's Public Policy Transmission Planning Process is contained in Attachment Y of the OATT, §31.4, et seq.

[2] See CLCPA, Ch. 106 of the Laws of 2019 (codified, in part, in Public Service Law (PSL) §66-p). Specifically, the Commission pointed to the CLCPA mandates requiring (1) a minimum of 70 percent of electricity to be derived from renewable sources by 2030, and (2) the procurement by 2035 of at least 9,000 MW of offshore wind. March 2021 Order, p. 4 (citing PSL §66-p(2), (5)).

[3] March 2021 Order, p. 20.

[4] Id., pp. 24-25.

It is this aspect of the March 2021 Order that is the subject of separate Petitions for Rehearing: the first filed by the Long Island Power Authority (LIPA) on April 19, 2021; and the second by Consolidated Edison Company Of New York, Inc. and Orange and Rockland Utilities, Inc. (the Con Edison Companies) filed on April 20, 2021. As discussed below, the petitions each assert that (1) the Commission made errors of law and/or fact regarding the proposed cost allocation methodology justifying rehearing of the part of the March 2021 Order regarding this issue, and (2) on rehearing, the Commission should refer to the NYISO its preference for application of the statewide load-ratio share methodology instead of the methodology specified in the March 2021 Order.

Each of the petitions also requested a stay of the part of the March 2021 Order related to the preferred cost allocation in the event the Commission does not grant the petitions for rehearing prior to the sixty-day deadline by which the NYISO is required under the OATT to file the prescribed cost allocation methodology with the Federal Energy Regulatory Commission (FERC).[5] By Order, issued on May 13, 2021, the Commission granted the requests for a stay of the March 2021 Order, while noting that "the substantive matters raised by LIPA and the [Con Edison] Companies will be addressed in a future order."[6]

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[5] OATT Section 31.5.5.4.1 states: "If the Public Policy Requirement that results in the identification by the NYPSC of a Public Policy Transmission Need prescribes the use of a particular cost allocation and recovery methodology, then the ISO shall file that methodology with the FERC within 60 days of the issuance by the NYPSC of its identification of a Public Policy Transmission Need."

[6] Cases 20-E-0497 et al., Order Granting Motions for Limited Stay (issued May 13, 2021), p. 2.

Through this Order, the Commission now addresses the substantive issues raised in the Petitions for Rehearing. For reasons discussed below, the Commission grants the Petitions for Rehearing and, on rehearing, rules that the cost allocation formula associated with the transmission need identified in the March 2021 Order is to be based entirely on a statewide volumetric load-ratio share, consistent with the cost allocation methodology applicable to (i) projects procured under all of the tiers adopted pursuant to the Clean Energy Standard (CES), (ii) projects procured under the Offshore Wind Standard, and (iii) local transmission and distribution projects approved by the Commission as Phase 2 projects under criteria established pursuant to the "Order on Local Transmission and Distribution Planning Process and Phase 2 Project Proposals," issued on September 9, 2021 (September 2021 Order).[7]

BACKGROUND

The March 2021 Order provides a detailed summary of the Commission's application of the NYISO's Public Policy Transmission Planning Process that does not bear repeating here, except to the extent relevant to the petitions before us.[8] As explained in the March 2021 Order, the Commission's primary role in the NYISO process is to determine if any proposals solicited by the NYISO, and subjected to the public comment process under the State Administrative Procedure Act, constitute a Public Policy Requirement that warrants the NYISO soliciting transmission solutions.[9] The Commission is also authorized to

[7] Case 20-E-0197, Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act, Order on Local Transmission and Distribution Planning Process and Phase 2 Project Proposals (issued September 9, 2021).

[8] See March 2021 Order, pp. 4-8.

[9] Id., p. 6.

identify a preferred cost allocation formula that differs from the default formula identified in the OATT.[10] The OATT specifies that the default cost allocation associated with a Public Policy Transmission Need is to be based on each of the load sharing entity's (LSE's) "load ratio share" – defined as "[t]he ratio of an LSE's Load to Load within the NYCA [i.e., New York Control Area] during a specified time period."[11]

A. The March 2021 Order

The March 2021 Order identified a Public Policy Transmission Need related to ensuring that offshore wind energy injected onto Long Island is deliverable to the rest of the State. Absent that deliverability, the energy produced by offshore wind projects interconnected on Long Island would otherwise need to be curtailed on days of the year associated with high wind velocity and moderate load. Noting this potential problem, PSEG Long Island, LLC (PSEG-LI) – LIPA's service provider – and other parties proposed a Public Policy Transmission Need driven by the 9,000 MW offshore wind mandate established pursuant to the CLCPA.[12]

On February 3, 2021, as required under Section 31.4.2.3 of the OATT with respect to a potential Public Policy Transmission Need located in the Long Island District, LIPA filed a referral letter with the Commission identifying the CLCPA as driving two related transmission needs:

1) Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Load Zone K (Long Island) to Zones I and J (Westchester County and New York City, respectively); and

[10] OATT, Attachment Y, §§1.12 and 31.5.5.4.3.

[11] Id.

[12] See March 2021 Order, pp. 2-3.

2) Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore wind export capability which LIPA asserts should include increasing capacity on portions of the existing 138 kV transmission "backbone" on the Long Island system between the Ruland Road and East Garden City substations to 345 kV.[13]

Although unmentioned in the March 2021 Order, LIPA also "recommend[ed] that the export cable and associated local upgrades be eligible for statewide cost allocation because the timely, cost-effective development of OSW [i.e., offshore wind] that will result from these transmission upgrades will confer statewide benefits."[14]

The March 2021 Order did not adopt a statewide cost allocation formula as requested by LIPA. Instead, as noted, the Commission ruled that the NYISO should apply a different formula under which (1) 75% of the selected projects' costs would be borne by the economic beneficiaries of the projects, and (2) the remaining 25% of costs would be borne by each of the LSEs under the Statewide load ratio share.[15] Under this 75/25 formulation, 75% of the selected project's costs would be borne by "those [LSEs] within the transmission planning region that benefit from those facilities in a manner that is at least roughly commensurate with estimated benefits," while 25% of the project's costs would be borne by each of the State's LSEs based on the percent of overall load served by the LSE.[16]

The Commission sought application of the same 75/25 methodology in orders issued in the two other proceedings

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[13] Case 20-E-0497, Letter from LIPA to John Rhodes, then-Chair of the Commission (filed February 3, 2021), pp. 2-3.

[14] Id., p. 3.

[15] See March 2021 Order, pp. 24-25.

[16] March 2021 Order, pp. 24-25 and n. 33 (citing OATT, Attachment Y, §31.5.2).

initiated under the NYISO's Public Policy Transmission Planning Process. In the AC Transmission proceedings – a series of related cases commenced in 2012 to address long-standing transmission congestion along the Central East and Upstate New York/Southeast New York electrical interfaces, the Commission adopted a cost allocation formula "whereby 75% of project costs are allocated to the economic beneficiaries of reduced congestion, while the other 25% of the costs are allocated to all customers on a load-ratio share."[17] The Commission ultimately sought application of the same 75/25 formulation regarding the identified AC Transmission need in the context of the NYISO's Public Policy Transmission Planning Process, finding that "[t]his allocation reflects that the primary benefit of the project will be reduced congestion into downstate load areas, but also recognizes that some benefits accrue to upstate customers in the form of increased reliability and reduced operational costs."[18]

Similarly, through its "Order Addressing Public Policy Transmission Need for Western New York," the Commission found that a portion of the selected project's costs should be based on the "beneficiaries pay principle" to "take into account the

[17] Cases 12-T-0502 et al., Alternating Current Transmission Upgrades, Order Establishing Modified Procedures for Comparative Evaluation (issued December 16, 2014), p. 41. The NYISO's Public Policy Transmission Planning Process was approved by FERC on July 17, 2014, well after commencement of the AC Transmission proceedings. See N.Y. Indep. Sys. Operator, Inc., 148 FERC ¶ 61,044 (2014) (accepting second compliance filing).

[18] Cases 12-T-0502 et al., supra, Order Finding Transmission Needs Driven by Public Policy Requirements (issued December 17, 2015), p. 52.

economic benefits associated with congestion relief . . ."[19] Nevertheless, in recognition of the fact that the selected transmission solution(s) would also provide "increased access to renewables [that] will reduce emissions and thus provide benefits statewide," the Commission also noted its preference for "a portion of the costs [to] be allocated on a load-ratio share statewide."[20]

Thus, the Commission made clear in both the AC Transmission and Western New York proceedings that it apportioned 75% of the cost allocation based on the economic benefits associated with congestion relief. Although the Commission apportioned the remaining 25% of the cost allocation based on the load ratio share, as noted above, it did so for different reasons:

- *AC Transmission Proceeding*: The Commission apportioned 25% of the costs to the load ratio share based on its recognition "that some benefits accrue to upstate customers in the form of increased reliability and reduced operational costs."
- *Western New York Proceeding*: The Commission apportioned 25% of the costs to load ratio share based on "increased access to renewables [that] will reduce emissions and thus provide benefits statewide."

B. Petitions for Rehearing

LIPA and the Con Edison Companies filed Petitions for Rehearing on April 19 and 20, 2021. LIPA argues in its petition that rehearing should be granted on the grounds that it was inappropriate for the Commission to seek the same 75/25 cost

[19] See Case 14-E-0454, New York Independent System Operator, Inc. - Proposed Public Policy Transmission Needs, Order Addressing Public Policy Transmission Need for Western New York (issued October 13, 2016), pp. 1, 16, and 17 (identifying "congestion relief in Western New York" as a Public Policy Requirement driving the need for transmission).

[20] Id., p. 16.

allocation assigned by the Commission to Public Policy Transmission Needs identified in the AC Transmission and Western New York Transmission proceedings. LIPA argues that, in the AC Transmission proceeding, the Commission "focused on the policy objective of reducing congestion," and relied on significant analysis to support the 75/25 allocation, "including a Staff Advisory Report that was the product of a technical conference convened to examine this issue (among others), in addition to a subsequent analysis performed by the NYISO at the Commission's direction."[21] As for the Western New York proceeding, LIPA argues that the 75% allocated by the Commission to economic beneficiaries was for the specific purpose of addressing "congestion reduction."[22] LIPA contends that the 75/25 cost allocation assigned by the Commission in the AC Transmission and Western New York proceedings is inappropriate here because congestion relief is not a basis for the identified transmission need in this case.[23]

LIPA argues that, if rehearing is granted, the Commission should assign a cost allocation based on a statewide load ratio share. It asserts that the Public Policy Requirement identified in the March 2021 Order constitutes "a sea change involving the complete transition from fossil-fueled generation to renewable energy in the CLCPA, specifically the CLCPA's off-shore wind mandate."[24] LIPA claims that support for a cost allocation based entirely on a load ratio share can also be found in the purpose underlying the off-shore wind transmission need identified in the March 2021 Order, which it asserts is to

[21] Id., p. 6 (citations omitted).

[22] Id.

[23] Id.

[24] Id., pp. 6-7.

deliver offshore wind energy "from Long Island to the rest of the State and reducing the costs of offshore wind renewable energy certificates ('ORECs') that will be borne by all ratepayers in New York State."[25]

The Con Edison Companies argue in their petition that the cost allocation methodology adopted in the March 2021 Order "should be revisited as it is inappropriate as a matter of policy" on the grounds that it "did not take into account that th[e identified] public policy need is different from prior needs the Commission has identified because it is driven by the [CLCPA] mandates."[26] The Con Edison Companies assert that rehearing should be granted because the March 2021 neither "explain[s] why or how assigning a large majority of the projects' costs to beneficiaries of reduced congestion 'is reflective of the Commission public policy objectives'" nor relies "on record evidence that its proposed 75/25 cost allocation methodology for a climate driven project is consistent with a 'beneficiaries pay principle.'"[27]

Should rehearing be granted, the Con Edison Companies assert that the Commission should adopt a load ratio share cost allocation "consistent with the State's policy determination reflected in how [Renewable Energy Credits (REC)], OREC, [Zero-Emissions Credit (ZEC),] and Tier 4 REC costs are borne throughout the state."[28] The Con Edison Companies also note that the "OATT establishes load ratio share as the default cost allocation in the Public Policy Transmission Planning Process" and that the NYISO based such approach on the grounds that it

[25] Id., p. 7.

[26] Con Edison Companies' Petition for Rehearing, p. 2.

[27] Id., p. 5.

[28] Id., p. 9.

"is intended to avoid uncertainty that could present a barrier to new transmission projects needed to meet public policy needs" and is a reasonable option in the context of a single state ISO in which "public policy needs will create widespread benefits throughout the state."[29]

NOTICE OF PROPOSED RULEMAKING

In accordance with the State Administrative Procedure Act (SAPA) §202(1) and the Commission's August 2014 Policy Statement, a Notice of Proposed Rulemaking regarding the Petitions for Rehearing was published in the State Register on June 2, 2021 [SAPA No. 20-E-0497SP2]. The time for submission of comments pursuant to the SAPA notice expired on August 2, 2021. Over 20 private and municipal entities and associations, as well as elected officials, provided responses to the petitions for rehearing, several after the 60-day deadline under SAPA. Additionally, LIPA filed comments in response to some of the public comments and Multiple Intervenors (MI) filed a reply comment to address LIPA's response. Under the Commission's regulations, replies to responses to a petition for rehearing "will not be entertained except in extraordinary circumstances."[30] Given the broad interest in and potentially precedential nature of this matter, the Commission finds the existence of extraordinary circumstances necessitating consideration of all initial and reply comments filed in response to the two petitions.

SUMMARY OF COMMENTS

Several business-affiliated entities filed comments opposing the petitions for rehearing, including MI, Nucor Steel

[29] Id., p. 10.

[30] 16 NYCRR §3.7(c).

Auburn, Inc. (Nucor), the New York Municipal Power Agency (NYMPA), the Buffalo Niagara Partnership, the Manufacturers Association of Central New York, Power for Economic Prosperity, Upstate United, and the Greater Binghamton Chamber of Commerce.

MI and NYMPA assert in their comments that the Commission should adhere to the 75/25 cost allocation identified with respect to the AC Transmission and Western New York transmission needs. MI asserts its view that, like the transmission needs identified in prior cases, the transmission need identified by the Commission in this case "is motivated by a desire to increase transmission capability to facilitate the deliverability of OSW generation through Long Island within the Southeast region of the State."[31] NYMPA similarly asserts that, as in the prior cases, "[c]ongestion relief due to renewable energy policies is the primary purpose of both of the public policy projects that are the subject of this proceeding."[32]

MI also asserts that enactment of the CLCPA since the Commission's identification of the AC Transmission and Western New York transmission needs does not provide justification for departing from the 75/25 formulation assigned to those needs because, in its view, the Commission's prior use of that formulation was motivated by increasing the deliverability of renewable energy.[33] NYMPA makes a similar point, noting that the primary purpose of the AC Transmission proceeding "was to upgrade and modernize New York's electric grid to deploy more renewables."[34]

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[31] MI's Response, dated May 4, 2021, p. 8.

[32] NYMPA Response, dated May 4, 2021, p. 6.

[33] MI's Response, p. 12.

[34] NYMPA's Response, p. 7.

Nucor argues in its comments in favor of maintaining the 75/25 cost allocation methodology on the grounds that the State's offshore wind policy, as specified in prior Commission orders, "is premised on the need to displace fossil generation on Long Island and in New York City" and that "[t]he energy, reliability, resilience, economic, fuel diversity, tax revenue, and public health benefits attributed to the offshore wind development are overwhelmingly expected to be realized on Long Island and in New York City."[35] In response to Con Edison Companies' argument regarding the need for certainty and consistency, Nucor counters that those policy goals would only be accomplished if the Commission maintains its prior precedent regarding the 75/25 formulation.[36]

The Buffalo Niagara Partnership, the Manufacturers Association of Central New York, Power for Economic Prosperity Upstate United, and Greater Binghamton Chamber of Commerce all point in their comments to what they view as the regional variation in benefits associated with the Long Island-based transmission need identified in the March 2021 Order. For example, the Buffalo Niagara Partnership asserts that the benefits bestowed under the CLCPA "are not equal" in that "a ratepayer in Buffalo may receive a marginal at best benefit from Long Island's CLCPA progress"; however, "the overwhelming majority of the project's benefit is felt by those utilizing the power the project will transmit."[37] The Manufacturers Association of Central New York states that, "[w]hile an Upstate/Central New York ratepayer may receive a marginal benefit from Long Island's CLCPA progress, most of the project's

[35] Nucor's Response, dated May 4, 2021, pp. 7-10

[36] Id., p. 11.

[37] Response of Buffalo Niagara Partnership, dated June 29, 2021, p. 1.

benefit is felt by those utilizing the power the project will transmit."[38]

Power for Economic Prosperity asserts in its comments that "the pending petitions for rehearing could shift hundreds of millions of dollars, or more, in costs related to transmission projects for wind projects off Long Island from downstate consumers to upstate consumers through NYISO charges."[39] Upstate United asserts that "[u]pstate consumers should not be forced to shoulder costs that will produce direct economic benefits downstate."[40] Finally, the Greater Binghamton Chamber of Commerce states that "there are looming questions about the cost and affordability of the [CLCPA]" and, "[i]f the costs for these projects are not paid for by the beneficiaries, this will significantly drive-up costs for both businesses and residents in Broome County."[41]

Several State legislators, including State Senators George M. Borello, Thomas F. O'Mara, Robert G. Ortt, John W. Mannion, Neil D. Breslin, Samra G. Brouk, Jeremy A. Cooney, Michelle Hinchey, Timothy M. Kenney, Rachel May, and Sean M. Ryan, and State Assembly Members Stephen Hawley and Michael J. Norris, also pointed to what they assert are the downstate benefits associated with the identified transmission need in calling on the Commission to deny the petitions.

The City of New York (City) filed a response in support of the petitions. The City states that the 75/25 cost allocation formula should not be applied here because the

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[38] Response of Manufacturers Association of Central New York, dated July 7, 2021, p. 1.

[39] Response of Power for Economics, p. 2.

[40] Response of Upstate United, dated August 9, 2021, p. 1.

[41] Response of Greater Binghamton Chamber of Commerce, dated August 9, 2021, p. 1.

transmission need identified in the March 2021 Order is different from the needs identified in the AC Transmission and Western New York proceedings; namely, the purpose of the transmission need here is "to facilitate achievement of the CLCPA's offshore wind goals."[42] Citing the Commission's "Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement," the City notes that "[t]he Commission previously held that the economic and environmental benefits of offshore wind inure to all New Yorkers, and [thus] the obligations associated with the State's renewable energy goals apply to all load-serving entities and customers."[43] The City states that the statewide benefits of offshore wind formed the foundation of the Commission's decision to socialize "the costs of offshore wind ... across the State among all load-serving entities on a load share ratio basis," and that the same policy applies here.[44]

Several Long Island-based entities offered similar support for the petitions. For example, the Association for a Better Long Island (ABLI) asserted that "it was not the intent of the CLCPA's offshore wind initiative to saddle Long Island, already burdened with high costs, with an unfunded mandate that is part of a greater statewide goal."[45] ABLI also notes that "Long Islanders have a history of supporting state energy initiatives that have benefited other regions," noting for example that "LIPA and its ratepayers could spend up to $820m over the next decade to subsidize upstate nuclear power plants,

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[42] City's Response, dated May 13, 2021, p. 2.

[43] Id. (citing Case 18-E-0071, Offshore Wind Energy, Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement (issued July 12, 2018) (OSW Order), pp. 31-33).

[44] Id.

[45] ABLI's Response, dated June 29, 2021, p. 1.

via the Energy Research and Development Authority's Zero Emission Credits program."[46]

The Nassau County Village Officials Association argues in its comments that the cost allocation specified in the March 2021 Order would "unfairly allocate costs of future transmission projects being considered to allow New York State to meet goals determined by the" CLCPA, and thus would "place a disproportionate burden on" County residents.[47] The Nassau County Executive noted that "[t]he cost allocation should reflect the fact that the entire State will benefit from a robust new alternative energy source that will improve the environment, reduce the threat of climate change and eliminate delivery bottlenecks."[48] The Suffolk County Supervisors Association similarly argues in its comments in favor of granting the petitions on the ground that "[o]ffshore wind infrastructure projects will benefit residents and businesses across New York State."[49] Other Long Island-based entities voicing similar support of the petitions include the Incorporated Village of Islandia and the Suffolk County Village Officials Association.

In its reply, dated August 2, 2021, LIPA takes issue with those comments supporting the 75/25 cost allocation methodology assigned to the transmission need identified in the March 2021 Order. LIPA starts by reiterating that the CLCPA mandated targets for offshore wind are driving the transmission needs identified in the March 2021 Order. It argues that

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[46] Id.

[47] Response of Nassau Co. Village Officials Association, dated June 21, 2021, p. 1.

[48] Response of Nassau Co. Executive, dated August 10, 2021, p. 1.

[49] Response of Suffolk County Supervisors Association, dated June 25, 2021, p. 1.

because the purpose of the CLCPA is to address climate change and not congestion relief, the 75/25 cost allocation applied in the AC Transmission and Western New York proceedings is distinguishable from the allocation that should be applied here.[50] LIPA also takes issue with the argument that the 75/25 cost allocation is based on long-seated precedent, noting that such allocation has only been applied by the Commission in two cases and, in any event, the 75/25 allocation departs from the default load ratio share methodology established in Attachment Y of the NYISO's OATT.[51]

In its reply to LIPA's comments, MI asserts that it "appears obvious that the benefits and beneficiaries" of the transmission need identified in the March 2021 Order "overwhelmingly will be located in the Downstate region."[52] While MI acknowledges the Commission's application of the load ratio share formula to the LSE's purchase obligation under the various CES tiers, it argues that the costs of public policy-driven transmission projects should be treated differently because such projects "are far more localized in nature than" the environmental attributes at issue under the CES tiers.[53]

[50] LIPA's Reply Comments, dated August 2, 2021, p. 4.

[51] Id., p. 6.

[52] MI's Reply Comments, dated August 4, 2021, p. 2.

[53] Id., p. 3.

STANDARD OF REVIEW

The standard of review and process regarding a petition for rehearing is set forth in Section 3.7 of the Commission's regulations.[54] Any party aggrieved by a Commission order may petition for rehearing within 30 days of the order's issuance. Rehearing may be sought only on the grounds that the Commission committed an error of law or fact, or that new circumstances warrant a different determination. A petition for rehearing shall separately identify and specifically explain and support each alleged error of law or fact or new circumstance warranting rehearing. As noted, any party may respond to a petition for rehearing within 15 days of the date the petition was served on the responding party.

DISCUSSION

Based on our review of the March 2021 Order, it appears that the Commission neither referenced nor addressed LIPA's specific request made in its referral letter to assign a statewide cost allocation formula to the requested transmission need. Instead, it appears that the Commission applied the cost allocation methodology referenced in the AC Transmission and Western New York proceedings absent analysis of why that methodology should apply to the transmission need identified in the March 2021 Order.

In analogous cases, the Commission has granted petitions for rehearing so that it may consider factual and/or legal matters that it inadvertently failed to address in the first instance. For example, the Commission granted, in part, a petition for rehearing filed by Verizon, related to issuance of a Certificate of Confirmation for a geographically limited cable television franchise, on the grounds that the initial order

[54] 16 NYCRR §3.7.

failed to "address certain underlying facts raised by Verizon"; namely, "that Verizon's one-time PEG Grant of $21,000 was inadvertently excluded in [] calculations" underlying the order.[55] More recently, in an enforcement matter regarding utility pole attachments, the Commission granted a petition for clarification to a prior order in which an ordering clause "inadvertently directed payment of [] penalties to the Department of Public Service (DPS) Staff," rather than for such payments to "be held in escrow."[56]

To comport with the reasoning in these cases, the Commission grants both LIPA's and the Con Edison Companies' Petitions for Rehearing so that it may squarely address the request to apply a statewide cost allocation formula to the transmission need identified in the March 2021 Order. On rehearing, the Commission reverses its prior ruling and holds that the NYISO's default load ratio share cost methodology is the appropriate cost allocation formula to be applied by the NYISO in addressing the transmission need identified in the March 2021 Order.

In reviewing the record, the petitions, and the public comments, the Commission is persuaded by the substantive arguments made by LIPA and the Con Edison Companies, particularly as related to the Commission's rulings requiring application of the load ratio share methodology to the LSE obligations under each of the four CES tiers and the Offshore Wind Standard.

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[55] See Case 14-V-0089, Verizon New York Inc. - Certificate of Confirmation for its Franchise, Order and Certificate of Confirmation Approving Franchise Subject to Conditions (issued August 14, 2014), p. 2.

[56] Case 20-M-0360, Greenlight Networks' - Pole Attachments, Order Granting Clarification (issued October 7, 2021), p. 2.

The CES was first established through Commission's "Order Adopting a Clean Energy Standard" (CES Order), issued on August 1, 2016.[57] A key aspect of the CES Order was the Commission's determination to apply the load ratio share as the compliance obligation for each of the LSEs under both (1) Tier 1 of the Renewable Energy Standard (RES) – applicable to new renewable energy resources beginning commercial operation on or after January 1, 2015, and (2) the Tier 3 ZEC requirement – applicable to nuclear power plants located in upstate New York. With respect to the Tier 1 RES requirement, the Commission found that the compliance obligation is to be shared proportionally between each of the State's LSEs: "The obligation is to be in the form of the procurement of new renewable resources, evidenced by the procurement of qualifying RECs [i.e., Renewable Energy Credits], acquired in quantities that satisfy mandatory minimum percentage proportions of the total load served by the LSE for the applicable calendar year."[58]

The Commission similarly ruled that each of the State's LSEs would be obligated to purchase Tier 3 ZECs based on "the portion of the electric energy load served by the LSE in relation to the total electric energy load served by all such LSEs."[59] The Commission based its ruling on the statewide benefits that accrue from carbon-free energy:

> Applying the obligation on a volumetric basis is rational and the most appropriate basis to broadly allocate the costs given the nature of carbon emissions that are a creature of the volume of electric generation and consumption. The Commission is instituting this program *to prevent widespread*

[57] See Case 15-E-0302, Large-Scale Renewable Program and a Clean Energy Standard, Order Adopting a Clean Energy Standard (issued August 1, 2016) (CES Order).

[58] Id., p. 78.

[59] Id., p. 150.

> *damage from carbon emissions that affect everyone*. It is fair and appropriate for all consumers to participate.[60]

Additionally, the Commission adopted the load ratio share allocation knowing that the ZEC payments would be made to the FitzPatrick, Nine Mile Point, and Ginna nuclear power plants, all located in northern New York adjacent to Lake Ontario.[61]

Next is the "Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement" (OSW Order), in which the Commission ruled that the load ratio share cost allocation would also apply to the LSE's obligation to purchase ORECs: "Each LSE will be obligated to purchase the percentage of ORECs purchased by NYSERDA in a year that represents the portion of the electric energy load served by the LSE in relation to the total electric energy load served by all such LSEs in the [NYCA]."[62] The Commission finds the OSW Order to be particularly compelling here given the nexus between the transmission need identified in the March 2021 Order and the need to ensure that offshore wind energy injected onto Long Island is capable of accessing load in the rest of the State. The OSW Order also addressed the precise argument made by several parties here; namely, that application of the load ratio share would be inequitable to ratepayers located outside of the downstate region because offshore wind would mostly benefit the downstate region. The Commission responded that:

> Downstate customers have been paying and will continue to pay a proportional share of REC costs for the RES, even though the large majority of RES developments are upstate. The Commission applied the RES obligation on a statewide basis because the benefits of RES are likewise statewide. *In the case of offshore wind, the*

[60] Id., p. 149 (emphasis added).

[61] Id., p. 146.

[62] OSW Order, pp. 31-32.

> *economic and environmental benefits will also be statewide.*"[63]

After enactment of the CLCPA into law, the Commission expanded the CES by including a new competitive Tier 2 (applicable to certain existing renewable energy facilities) and a new Tier 4 (applicable to large scale renewables that are located within or whose energy is directly deliverable to New York City).[64] Consistent with its prior holdings, the Commission required each LSE under CES Tiers 2 and 4 to purchase RECs in proportion to its overall share of statewide load.[65] With respect to Tier 4, the Commission explained as follows:

> The purpose of Tier 4 is not to confer a special benefit on a particular area of the State but to facilitate statewide compliance with the CLCPA. Thus, contrary to the suggestion of some commenters, there is no basis for allocating a disproportionate cost of Tier 4 to Zone J customers. Like every tier within the CES, each of which has its own geographic characteristics, the financial responsibility for Tier 4 is most fairly allocated on a statewide load-share basis.[66]

The Commission recently reaffirmed the application of the load ratio share methodology to two Tier 4 projects subject to the Commission's contract approval.[67] The Commission also recently found that the costs of "Phase 2" projects (i.e., local and transmission and distribution projects "necessary or

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[63] Id., p. 34 (emphasis added).

[64] Case 15-E-0302, supra, Order Adopting Modifications to the Clean Energy Standard (issued October 15, 2020) (CES Modification Order).

[65] Id., pp. 67-68 and 102.

[66] Id., p. 103.

[67] See Case 15-E-0302, supra, Order Approving Contracts for the Purchase of Tier 4 Renewable Energy Certificates (issued April 14, 2022), pp. 136-39.

appropriate to accelerate progress toward achievement of the CLCPA mandates") would similarly "be allocated across Utilities based upon a volumetric MWh load ratio share methodology."[68]

Another relevant transmission project is the Smart Path Connect project – which was approved as a "priority transmission project" by the Commission at the October 2020 session.[69] The New York Power Authority and Niagara Mohawk Power Corporation d/b/a National Grid each recently filed applications with FERC to allocate and recover the costs of each entity's investment in their aspects of the project through a load ratio share allocation.[70]

The determination here is also supported by the CLCPA because that statute provided the basis for the Public Policy Requirement found to apply in the March 2021 Order. The CLCPA cites repeatedly in the Legislature's "findings and declaration" to the statewide benefits that are to accrue from implementation of the clean energy and technology mandates specified under the statute.[71] For example, the Legislature declared that "[c]limate change is adversely affecting economic well-being, public health, natural resources, and the environment of New York," and detailed the multiple ways climate change is adversely impacting the State, including through an increase in the "severity and frequency of extreme weather events," "a decline in freshwater

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[68] September 2021 Order, p. 32.

[69] See Case 20-E-0197, supra, Order on Priority Transmission Projects (issued October 15, 2020) (referred to as the Northern New York project).

[70] See FERC Case ER-1204, Letter, dated February 10, 2022, from Gary D. Levenson Principal Attorney, New York Power Authority, to Kimberly D. Bose, Secretary of FERC, p. 4; FERC Case ER22-1201, Letter, dated March 4, 2022, from David Lodemore, Senior Counsel, National Grid USA to Honorable Kimberly D. Bose, Secretary of FERC, p. 3.

[71] L. 2019, ch. 106, §1(1).

and saltwater fish populations," "increased average temperatures, which increase the demand for air conditioning and refrigeration among residents and businesses," and "exacerbation of air pollution."[72] The Legislature declared that the primary purpose of CLCPA is for "New York" to address these impacts head on by "reduc[ing] greenhouse emissions," which the Legislature found would result in an associated reduction in "the rate of climate change."[73]

The CLCPA established numerous statewide targets to address the specified statewide impacts, including the "goal of the state of New York to reduce greenhouse gas emissions from all anthropogenic sources 100% over 1990 levels by the year 2050, with an incremental target of at least a 40 percent reduction in climate pollution by the year 2030."[74] The CLCPA also included several "statewide" renewables mandates,[75] which the Commission is implementing through the CES Modification Order. Nothing in the statute calls for a regional variation in approach to addressing climate change.

The Commission further finds relevant the Accelerated Renewable Energy Growth and Community Benefit Act (Accelerated Renewables Act) because it required, among other things, for the Department of Public Service (DPS) to prepare a Power Grid Study and the study then prepared by DPS recommended the specific

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[72] Id.

[73] Id., §3.

[74] Id., §1(4).

[75] See CLCPA §4 (adding a new PSL §66-p) (requiring the Commission to establish programs to ensure that at least 70% of "statewide" electric generation is from renewable resources by 2030; by the year 2040 the "statewide electrical demand system will be zero emissions"; and "the procurement by the state's load serving entities of at least nine gigawatts of offshore wind electricity generation").

transmission need identified in the March 2021 Order.[76] Of note here is the legislative finding under the Accelerated Renewables Act that the statewide emissions- and technology-based targets established in the CLCPA could not be attained absent significant upgrades to the State's transmission system:

> In particular, the state shall provide for timely and cost effective construction of new, expanded and upgraded distribution and transmission infrastructure as may be needed to access and deliver renewable energy resources, which may include alternating current transmission facilities, high voltage direct current transmission infrastructure facilities, and submarine transmission facilities needed to interconnect off-shore renewable generation resources to the state's transmission system.[77]

In sum, the LSE compliance obligation specified in the Commission's rulings regarding each of the CES Tiers and the Offshore Wind Standard is based on the load ratio share. We find that the reasoning underlying those rulings applies with equal force here. The Commission also finds the load ratio share cost allocation methodology to be consistent with the statewide focus of the CLCPA and the Accelerated Renewables Act, and notes that NYPA and National Grid are seeking application of the same methodology with respect to the Smart Path Connect project.

Finally, as already intimated, the Commission finds compelling the direct nexus between the transmission need identified in the March 2021 Order and the offshore wind procurement mandate imposed under the CLCPA. This nexus is made clear from the March 2021 Order, where the Commission found that "additional transmission from Long Island (NYISO Zone K) to the mainland (Zones I and J) will be needed by 2035 to enable the

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[76] See Id., §7; March 2021 Order, pp. 21-22.

[77] See L. 2020, ch. 58, part JJJ, §1(2)(b).

interconnection of at least 3,000 MW (of the 9,000 MW total) of OSW to LIPA's system."[78] To put this into context, the transmission upgrades necessary to adequately deliver energy from offshore wind interconnected on Long Island to the rest of the State is a direct outgrowth of the 9,000 MW offshore wind procurement mandate imposed on the Commission by the CLCPA. Since the Commission already determined that ORECs are to be paid through an obligation placed on LSEs based on a load ratio share methodology, it makes logical sense to require a directly related transmission need to be paid for through the same methodology.

As noted above, several parties, including MI and NYMPA, request that the Commission adhere to the 75/25 formulation applied with respect to the AC Transmission and Western New York transmission needs. However, the Commission finds that the reasoning underlying the 75% apportioned under the 75/25 allocation is inapposite here. That principle was first espoused in the Commission's "Order Establishing Modified Procedures for Comparative Evaluation," which, as noted above, was issued on December 16, 2014, well before the Commission's adoption of the CES and enactment of the CLCPA and Accelerated Renewables Act.

The Commission also finds support from the reasoning behind its assignment of a 75/25 cost allocation methodology to the transmission needs identified in the AC Transmission and Western New York proceedings. As noted above (at pp. 7-8), the primary basis for the Commission's identification of transmission needs in both proceedings, and the reason for the 75% allocated to beneficiaries, was the economic benefits associated with congestion relief that would be addressed by the

[78] March 2021 Order, pp. 22-23 (citing Offshore Wind Study).

needs. That simply was not a benefit referenced by the Commission in the March 2021 Order. Instead, the Commission finds here that all utility customers are equal beneficiaries of the projects to be selected pursuant to the transmission need identified in the March 2021 Order because of the intended role of the projects to distribute zero-emission energy to the rest of the State.

Moreover, in the Western New York proceeding, the Commission pointed to increased access to renewables as an ancillary benefit of the identified transmission reason, and hence the reason why it assigned only 25% of the costs to load ratio share.[79] Here, by contrast, the entire focus of the identified transmission need is on facilitating compliance with the CLCPA by ensuring that offshore wind energy is accessible to the rest of the State whenever it is being produced. Thus, rather than allocating only 25% of the costs to load ratio share, as the Commission did in the Western New York proceeding, the load ratio share is being assigned to 100% of the costs here because access to renewables constituted the entire basis for identifying the transmission need in the March 2021 Order.

The Commission disagrees with MI's assertion that the AC Transmission and Western New York transmission needs rested primarily on increasing the deliverability of renewable energy. As just noted, the primary basis underlying the identified transmission needs was the economic benefits associated with reducing transmission congestion; increased access to renewable energy was identified as a benefit only in the Western New York proceeding, albeit as an ancillary benefit.

[79] See supra, pp. 7-8. By contrast, none of the cost allocation in the AC Transmission proceeding was based on increased access to renewables.

The Commission also disagrees with the arguments made by Nucor, the Buffalo Niagara Partnership, the Manufacturers Association of Central New York, and other commenters to retain the 75/25 formulation on the grounds that the transmission need identified in the March 2021 Order would only benefit downstate New York and thus any projects selected to meet that need should be paid predominantly by ratepayers in that region. As noted, the Commission believes that all aspects of offshore wind energy, including the transmission upgrades necessary to enable that energy to access the rest of the State, have statewide benefits. There is, moreover, no basis to differentiate the policies underlying the application of the load ratio share methodology to the LSEs' compliance obligation under both the CES and Offshore Wind Standard from the policies underlying the Commission's decision here. In short, the policies underlying the forgoing Commission orders, as well as the CLCPA and Accelerated Renewables Act, support a unified statewide approach to transforming the State's energy production and delivery system.

CONCLUSION

For the foregoing reasons, the Petitions for Rehearing filed by LIPA and the Con Edison Companies are granted and, on rehearing, the Commission reverses the aspect of the March 2021 Order related to cost allocation and holds here that the load ratio share cost allocation methodology should be applied by the NYISO in addressing the transmission need identified in the March 2021 Order.

The Commission orders:

1. The Petitions for Rehearing filed by the Long Island Power Authority and Consolidated Edison Company of New York, Inc. are granted, and, on rehearing, the substance of the relief requested in the petitions is also granted.

2. The New York Independent System Operator, Inc. shall utilize the default load ratio share allocation formula identified in the Open Access Transmission Tariff related to the cost recovery associated with the Public Policy Transmission Need identified in the March 2021 Order previously issued in this case.

3. These proceedings are closed.

By the Commission,

(SIGNED) MICHELLE L. PHILLIPS
Secretary