

By Electronic Delivery

October 3, 2016

Hon. Kathleen H. Burgess
Secretary to the Commission
New York State Public Service Commission
Agency Building 3, 19th Floor
Albany, NY 12223-1350

Subject: Case No. 16-E-0558 – In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2016.

Dear Secretary Burgess:

The New York Independent System Operator, Inc. (“NYISO”) hereby submits proposed transmission needs driven by Public Policy Requirements for consideration by the New York State Public Service Commission (“Commission” or “NYPSC”) as a part of the NYISO’s 2016–2017 transmission planning cycle.

The NYISO Open Access Transmission Tariff (“OATT”) provides that at the start of each cycle of its Public Policy Transmission Planning Process, the NYISO “will provide a 60-day period, . . . to allow any stakeholders or interested parties to submit to the [NYISO], or for the [NYISO] on its own initiative to identify, a proposed transmission need(s) that it believes is being driven by Public Policy Requirement(s) and for which transmission solutions should be requested and evaluated.”¹ The NYISO “will post all submittals on its website after the end of the needs solicitation period, and will submit to the NYPSC all submittals proposed by stakeholders, other interested parties, and any additional transmission needs and criteria identified by the [NYISO].”² For any submittal proposing transmission needs that require a physical modification to transmission facilities in the Long Island Transmission District, the NYISO will post those submittals on its website and submit them to the Commission and the Long Island Power Authority (“LIPA”), together with any transmission needs and criteria proposed by the NYISO.³

The OATT further provides that the Commission “will review all proposed transmission need(s) and, with input from the [NYISO] and interested parties, identify the transmission needs, if any, for which specific transmission solutions should be requested and evaluated.”⁴ In

¹ OATT Section 31.4.2.

² *Id.*

³ *Id.*

⁴ OATT Section 31.4.2.1.

connection with the Commission's role in the NYISO's Public Policy Transmission Planning Process, the Commission issued, on August 15, 2014, a "Policy Statement on Transmission Planning for Public Policy Purposes" in the above-entitled proceeding to establish procedures "to guide the transmission planning process for public policy purposes."⁵

In the case of submittals proposing transmission needs that require a physical modification to transmission facilities in the Long Island Transmission District, the tariff requires LIPA to review those submittals and identify the transmission needs within the Long Island Transmission District driven by a Public Policy Requirement, in consultation with the New York State Department of Public Service.⁶ The OATT also requires LIPA to issue a written statement as to whether a Public Policy Requirement does or does not drive a need to physically modify transmission facilities solely within the Long Island Transmission District and then transmit to the Commission for review and a determination whether the transmission need identified by LIPA should be considered a Public Policy Transmission Need for purposes of the NYISO evaluating transmission solutions for selection and regional cost allocation under the Public Policy Transmission Process.⁷

On August 1, 2016, 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 September 30, 2016. Submitted for filing herewith in the above-entitled proceeding are twelve (12) proposals for transmission needs driven by Public Policy Requirements provided to the NYISO by: (i) AVANGRID Networks, Inc., (ii) City of New York, (iii) H.Q. Energy Services (U.S.) Inc., (iv) Invenergy LLC, (v) New York Power Authority ("NYPA"), Niagara Mohawk Power Corporation d/b/a National Grid, and Central Hudson Gas & Electric Corporation, (vi) New York Transco LLC, (vii) "New York Transmission Owners"⁸ and NYPA, (viii) NextEra Energy Transmission New York, Inc., (ix) North America Transmission, (x) Poseidon Transmission 1, LLC, (xi) PPL Translink, Inc., and (xii) PSEG Long Island. The NYISO has posted these submittals on its Planning Studies website.⁹

⁵ NYPSC Case No. 14-E-0068, Policy Statement on Transmission Planning for Public Policy Purposes (August 15, 2014), at p 3.

⁶ OATT Section 31.4.2.3.

⁷ *Id.*

⁸ As stated in their submission, the "New York Transmission Owners" include Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., New York State Gas & Electric Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation.

⁹ The submittals are posted under "Proposed Needs" contained within the "Public Policy Documents" folder on the NYISO's Planning Studies website, which can be accessed at http://www.nyiso.com/public/markets_operations/services/planning/planning_studies/index.jsp.

Hon. Kathleen H. Burgess
Secretary to the Commission
October 3, 2016
Page 3

Please contact me at (518) 356-6220 or cpatka@nyiso.com if you have any questions or concerns.

Respectfully submitted,

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

By: /s/ Carl F. Patka

Carl F. Patka

Assistant General Counsel

New York Independent System Operator, Inc.

10 Krey Boulevard

Rensselaer, NY 12144

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Rensselaer, NY this 3rd day of October, 2016.

/s/ Mohsana Akter

Mohsana Akter
New York Independent System Operator, Inc.
10 Krey Blvd.
Rensselaer, NY 12144
(518) 356-7560

By Electronic Delivery

October 3, 2016

Ralph V. Suozzi, Chair
Board of Trustees
Long Island Power Authority
333 Earle Ovington Blvd, Suite 403
Uniondale, NY 11553

Subject: 2016-2017 NYISO Public Policy Transmission Planning Cycle – Submittals
Proposing Transmission Needs Within the Long Island Transmission District

Dear Chair Suozzi:

The New York Independent System Operator, Inc. (“NYISO”) hereby submits proposed transmission needs driven by Public Policy Requirements for consideration by the Long Island Power Authority (“LIPA”) as a part of the NYISO’s 2016–2017 transmission planning cycle.

The NYISO Open Access Transmission Tariff (“OATT”) provides that at the start of each cycle of its Public Policy Transmission Planning Process, the NYISO “will provide a 60-day period, . . . to allow any stakeholders or interested parties to submit to the [NYISO], or for the [NYISO] on its own initiative to identify, a proposed transmission need(s) that it believes is being driven by Public Policy Requirement(s) and for which transmission solutions should be requested and evaluated.”¹ The NYISO “will post all submittals on its website after the end of the needs solicitation period, and will submit to the [New York State Public Service Commission (“NYPSC”)] all submittals proposed by stakeholders, other interested parties, and any additional transmission needs and criteria identified by the [NYISO].”² For any submittal proposing transmission needs that require a physical modification to transmission facilities in the Long Island Transmission District, the NYISO will post those submittals on its website and submit them to the NYPSC and LIPA, together with any transmission needs and criteria proposed by the NYISO.³

The OATT further provides that the NYPSC “will review all proposed transmission need(s) and, with input from the [NYISO] and interested parties, identify the transmission needs, if any, for which specific transmission solutions should be requested and evaluated.”⁴ In the case of submittals proposing transmission needs that require a physical modification to

¹ OATT Section 31.4.2.

² *Id.*

³ *Id.*

⁴ OATT Section 31.4.2.1.

transmission facilities in the Long Island Transmission District, the tariff requires LIPA to review those submittals and identify the transmission needs within the Long Island Transmission District driven by a Public Policy Requirement, in consultation with the New York State Department of Public Service.⁵ The OATT also requires LIPA to issue a written statement as to whether a Public Policy Requirement does or does not drive a need to physically modify transmission facilities solely within the Long Island Transmission District and then transmit to the NYSPC for review and a determination whether the transmission need identified by LIPA should be considered a Public Policy Transmission Need for purposes of the NYISO evaluating transmission solutions for selection and regional cost allocation under the Public Policy Transmission Process.⁶

On August 1, 2016, 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 September 30, 2016. Submitted for review are three (3) proposals for transmission needs that, as proposed, will require a physical modification to transmission facilities in the Long Island Transmission District by: (i) North America Transmission, (ii) Poseidon Transmission 1, LLC, and (iii) PSEG Long Island. The NYISO has posted these submittals on its Planning Studies website.⁷

Please contact me at (518) 356-6220 or cpatka@nyiso.com if you have any questions or concerns.

Respectfully submitted,

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.
By: /s/ Carl F. Patka
Carl F. Patka
Assistant General Counsel
New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, NY 12144

cc. NYSPC Secretary
Joseph Nelson, Van Ness Feldman, LLP

⁵ OATT Section 31.4.2.3.

⁶ *Id.*

⁷ The submittals are posted under “Proposed Needs” contained within the “Public Policy Documents” folder on the NYISO’s Planning Studies website, which can be accessed at http://www.nyiso.com/public/markets_operations/services/planning/planning_studies/index.jsp.



September 30, 2016

Mr. Zachary Smith
Vice President, System & Resource Planning
New York Independent System Operator
10 Krey Boulevard
Rensselaer, New York 12144

Re: Response of AVANGRID to New York Independent System Operator Solicitation of
Transmission Needs Driven by Public Policy Requirements

Dear Zach:

AVANGRID Networks, Inc. ("AVANGRID") submits this letter in response to the August 1, 2016 Public Policy Requirements solicitation associated with the New York Independent System Operator's ("NYISO") Public Planning Process for 2016-2017. As described below, AVANGRID identifies herein Public Policy Requirements associated with the New York State Public Service Commission's ("NYPSC") Clean Energy Standard, Clean Energy Fund and Reforming the Energy Vision Proceedings, the New York State Energy Plan, New York State agencies compliance plans under the U.S. Environmental Protection Agency's ("EPA") Clean Power Plan, and the NYISO 2010 Wind Generation Study/New York State Transmission Assessment and Reliability Study ("STARS").

The Clean Energy Standard ("CES")

On August 1, 2016, the NYPSC issued its Order Adopting a Clean Energy Standard ("CES"). The order adopted the goal of the State Energy Plan that 50% of the electricity used in New York State will be generated by renewable sources by 2030. The order also confirmed the related goal of preserving existing zero-emissions nuclear generation resources as a bridge to the clean energy future. To achieve these goals, the order requires every load serving entity in New York State to procure qualifying Renewable Energy Credits ("RECs") and Zero-Emissions Credits ("ZECs") in quantities that satisfy the mandatory minimum requirements established by the order.¹

¹ Order to Adopting a Clean Energy Standard at 2 (Aug. 2016), available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={44C5D5B8-14C3-4F32-8399-F5487D6D8FE8}>

To achieve the CES goals, New York will need to increase dramatically its reliance on renewable resources. A large proportion of these resources will likely be developed in areas of western and northern New York State, remote from load centers. New transmission facilities will be required so that renewable energy required by the NYPSC order is not bottled in local transmission systems and can reach load centers throughout the state, including those in downstate regions.² New transmission facilities will also be important to help preserve the upstate nuclear plants as they provide the zero-emission bridge to New York's clean energy future by reducing current system congestion which impedes these plants' access to downstate energy and capacity markets. Increased energy and capacity revenues for such plants will also reduce future ZEC prices for the benefit of customers statewide.³

Clean Energy Fund and Reforming the Energy Vision Proceedings

In addition to the CES Order, the NYPSC has issued orders in other proceedings with the objective of increasing alternative energy resources in New York State, including orders in the Clean Energy Fund and Reforming the Energy Vision proceedings. In its January 21, 2016 Clean Energy Fund order, the NYPSC approved a ten year commitment for \$5.3 billion to clean energy programs in New York State to be managed by the New York State Energy Research and Development Authority under the Commission's supervision.⁴ The Clean Energy Fund innovation and research programs involving smart grid, renewables, and distributed energy resources integration may need additional transmission to increase the ability to deliver grid-scale renewable energy to the State's load centers, particularly since such renewable resources are likely be developed in western and northern New York State.⁵

Climate Change and Emissions Policies Driving the Need for Transmission

State and federal regulators have taken actions to address climate change by releasing goals for carbon emissions reductions. The New York State Energy Plan calls for a 40 percent reduction in greenhouse gas emissions in the energy sector, including power generation,

² Order to Adopting a Clean Energy Standard at 33 (Aug. 2016), available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={44C5D5B8-14C3-4F32-8399-F5487D6D8FE8}>

³ Order to Adopting a Clean Energy Standard at 128 (Aug. 2016), available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={44C5D5B8-14C3-4F32-8399-F5487D6D8FE8}>

⁴ Order Authorizing the Clean Energy Fund Framework at 106 (Jan. 2016), available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={B23BE6D8-412E-4C82-BC58-9888D496D216}>

⁵ Clean Energy Fund Information Supplement at 138 (Jun. 2015), available at <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={FC3FBD53-FBAC-41FB-A40E-3DA0A5E0866A}>

industry, buildings and transportation.⁶ The U.S. Environmental Protection Agency's ("EPA") Clean Power Plan calls for reductions in emissions from large generators by 2030⁷. Though the EPA's rule has been placed on hold by the U.S. Supreme Court, compliance goals are scheduled to begin in 2022 and New York State agencies have indicated that they intend to continue developing compliance plans. Transmission projects will be needed as part of the solution to address these requirements.

New York City Objectives

The City of New York has released its own energy objectives that call for an 80 percent reduction in the city's greenhouse gas emissions by 2050 and a 35 percent reduction in such emissions from City government by 2025.⁸ While these objectives have yet to be codified into law or regulation thus far, statutory or regulatory changes could be adopted in the future and they will likely be an additional driver behind the development of new renewable resources in New York State and therefore the need for additional transmission to support this development.

The NYISO 2010 Wind Generation Study and New York State Transmission Assessment and Reliability Study ("STARS")

As evaluated in NYISO studies, significant growth in intermittent resources (such as wind) at the regional and local transmission levels leads to increased needs for balancing services from quick starting and ramping generation. Transmission solutions add additional flexibility that the electric system needs to manage increased energy production from variable resources.

The NYISO 2010 Wind Generation Study was a technical study to evaluate the impact of large-scale integration of wind generation on the New York Power System with simulations "analyzed to identify the transmission constraints – local and system – that result in potential wind energy production being limited (*i.e.*, "bottled")" with "three general areas of congestion: southwestern portion of Central (Zone C), Willis (Zone D), and Watertown (Zone E)."⁹ The New York State Transmission Assessment and Reliability Study ("STARS") concluded, "[t]o meet state public policy objectives of increased renewable resources, the underlying local [transmission] upgrades identified in the NYISO 2010 Wind Generation Study should be constructed based on a review of the status of the development of the wind projects in the three upstate areas

⁶ 2015 New York State Energy Plan, Volume 1 at 112, available at <https://energyplan.ny.gov>

⁷ 40 CFR Part 60, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule available at: <https://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.

⁸ See One NYC: 2016 Progress Report. Accessed at <http://www1.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC-2016-Progress-Report.pdf>

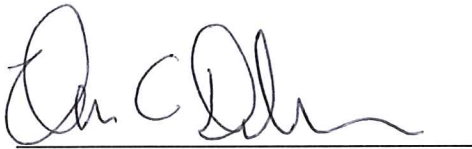
⁹ Growing Wind: Final Report of the NYISO 2010 Wind Generation Study at 76 (Sept. 2010), available at http://www.uwig.org/growing_wind_-_final_report_of_the_nyiso_2010_wind_generation_study.pdf.

identified in that study. This would lead to greatly improved deliverability of wind resources and reduced emissions.”¹⁰

Conclusion

The construction of new transmission is necessary to achieve the State’s Public Policy Requirements set forth in the NYPSC orders and other initiatives described above, including in particular additional transmission to permit an increased development and utilization of renewable resources and the preservation of the upstate zero emission nuclear plants to meet New York State’s identified clean energy goals. AVANGRID accordingly recommends that as part of NYISO’s 2016/2017 Public Policy planning process the NYISO and the NYPSC identify Public Policy Transmission Needs to address these Public Policy Requirements. In doing so, NYISO should invite proposals for feasible, efficient, cost effective and environmentally sensitive transmission solutions, both AC and DC, that will support and achieve the identified Public Policy Transmission Needs and evaluate those proposals in a manner that promotes creativity and competition consistent with the NYISO tariff and the FERC Order No. 1000.

Sincerely,



Thorn C. Dickinson
Vice President – Business Development
AVANGRID Networks

¹⁰ New York State Transmission Assessment and Reliability Study at 7 (Apr. 2012), available at http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Special_Studies/STARS/Phase_2_Final_Report_4_30_2012.pdf

September 30, 2016

VIA EMAIL

Mr. Zachary Smith
Vice President, System & Resource Planning
New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, New York 12144

Re: NYISO Solicitation of Transmission Needs Driven by Public Policy Requirements

Dear Mr. Smith:

On behalf of the City of New York, we respectfully submit this letter in response to the New York Independent System Operator, Inc.'s ("NYISO") August 1, 2016 "Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2016-2017 Transmission Planning Cycle: ("Notice"). The City requests that the proposals set forth below be considered in accordance with the process described in Section 31.4 of the NYISO's Open Access Transmission Tariff ("OATT").

On August 1, 2016, the New York Public Service Commission ("NYPSC") adopted a Clean Energy Standard ("CES") for New York. Meeting the goals of the CES will require a substantial investment in new renewable resources. As noted by the NYISO in its Supplemental Comments on the CES, substantial investment in new transmission also will be needed.¹

Within New York City and in international forums, Mayor de Blasio has emphasized that climate change is a clear and present danger to New York City. The City is proactively responding to this problem, spending billions of dollars to protect its infrastructure, residents, and businesses from the effects of climate change. Greater reliance on renewable resources is another important action that must be taken to help combat climate change. Indeed, carbon reductions are a cornerstone of the City's public policies, and the City has adopted a goal of 80%

¹ PSC Case 15-E-0302, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, Supplemental Comments of the NYISO, dated July 8, 2016.

emissions reductions by 2050. Earlier this month, the City released “New York City’s Roadmap to 80x50” to provide a comprehensive assessment, based on the best available science and state-of-the-art greenhouse gas emissions modeling, of the steps needed to achieve this ambitious goal.²

In order to achieve the 80x50 goal, and as discussed in the Roadmap, the City has been evaluating a number of options for increasing its reliance, and that of New York City consumers generally, on renewable resources. Part of the City’s analysis has been focused on the State’s transmission system and the City’s ability to access renewable resources constructed in upstate areas and adjoining regions. In fact, to achieve the 80x50 goal, the City has estimated that over 70 percent of its energy will need to come from renewable resources.

Additionally, the adoption of the Clean Power Plan evidences a broad federal policy regarding reduction of greenhouse gas emissions and greater emphasis on generation sources that do not use fossil fuels. More broadly, there can be no dispute that interest in renewable resources is expanding and future reliance on fossil-fueled power plants will diminish.

Other air quality benefits arising from increased reliance on renewable resource constitutes a further public policy requirement supporting upgrades to the Bulk Power System. The New York State Department of Environmental Conservation has adopted State Implementation Plans related to compliance with the Clean Air Act and U.S. Environmental Protection Agency’s National Ambient Air Quality Standards (“NAAQS”) for ozone, particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead.³ Increasing transmission capacity into Zone J will lessen reliance on the fleet of inefficient generating facilities within New York City, many of which are more than 40 to 50 years old. Further reductions in operations of those facilities will improve local and regional air quality and contribute to compliance with the NAAQS.

Within its planning function, the NYISO needs to properly and comprehensively consider these material changes in the generation resource mix and develop designs and plans for the transmission system that will be needed to bring power from these resources to the State’s load centers, particularly New York City. Arguably some transmission enhancements are needed immediately (*e.g.*, in the North Country, as discussed below). Other enhancements may not be needed for five or ten years or more. However, given the time it takes to site and construct new transmission lines, the planning process for addressing the State’s future needs must start now.

² The Roadmap is available at <http://www1.nyc.gov/site/sustainability/codes/80x50.page>.

³ See <http://www.dec.ny.gov/chemical/8403.html>.

1. There Is An Immediate Need For Transmission Enhancements In And From Northern New York To Address The State's Public Policy As Set Forth In The CES

There are substantial transmission constraints in the New York Bulk Power System that prevent the free flow of electricity throughout the State.⁴ In particular, the transfer capability from areas in Northern and Western New York, where the development of renewable resources makes the most sense, to New York City is not adequate.

These existing deficiencies are partially being addressed by the previously identified public policy need in Western New York, and partially by the public policy need to reduce or eliminate the UPNY-SENY constraint. These upgrades, however, do not contemplate the addition of substantial amounts of new generation that will need to be transmitted to load centers. In addition, a complete solution to the existing bottlenecks requires improvements within Northern New York. It is well established that the State cannot fully access the wind generation potential in Northern New York due to insufficient transmission capacity. Additionally, there is substantial excess Canadian renewable generation capacity that could be used to help meet the State's and City's concurrent public policy goals. However, there is not enough transmission capacity connecting to Ontario and Quebec to access such resources.

Accordingly, the City respectfully requests that improvements to the Bulk Power System in Northern New York be identified as a transmission need driven by public policy requirements pursuant to Section 31.4 of the OATT.

The Notice requested that for each proposed public policy need identified, the proponent provide criteria for evaluation of solutions. The City proposes that the NYISO and NYPSC apply the following criteria to their consideration of related projects. The first criterion would measure the extent to which the project allows downstate load centers to access the renewable resources in northern New York. The second criterion would examine the costs of the project as compared to other options to provide a similar amount of renewable capacity to downstate load centers (simply looking at cost-effectiveness of the project may not be appropriate as the projects are not necessarily intended to lower downstate energy prices).

The Notice further requested that proponents discuss how their proposals would fulfill the identified public policy need. Expanding and strengthening the Bulk Power System in Northern

⁴ This assertion is supported by the transmission congestion studies performed by the U.S. Department of Energy. The 2006 and 2009 National Electric Transmission Congestion Studies identified congestion in eastern New York as a significant concern. The studies performed by the Eastern Interconnection Planning Collaborative also identified a need to eliminate congestion in the Hudson Valley corridor.

New York would facilitate the construction of renewable resources, particularly wind farms, in areas of the State that are most suitable for such purposes. The NYISO and others have studied New York's wind potential and concluded that transmission upgrades are needed to "unbottle" wind resources located in the northern part of the state.⁵

More broadly, the State has recognized this public policy need, identifying one of the State's essential transmission actions as "[i]nitiate transmission upgrades in Northern New York to help facilitate renewable energy development."⁶ The Energy Highway Blueprint noted the existence of bottlenecks that are adversely impacting the development of renewable resources in that region and proposed projects to alleviate the bottlenecks.⁷ The adoption of the CES arguably requires a reexamination of the Blueprint, as discussed below, but it remains a reasonable basis for demonstrating that the State has already recognized the public policy-based need for the transmission enhancements proposed herein.

The proposed enhancements can serve a second purpose that would provide even more benefits to the State and significantly contribute to achievement of the State's renewable energy and carbon reduction goals. There are substantial renewable resources in existence and under development in adjacent regions to the North (*i.e.*, Quebec and Ontario). However, the same bottlenecks mentioned above, and perhaps others, prevent the State from fully accessing these carbon-free sources of electricity. The City acknowledges that, at present, some Canadian renewable resources are excluded from the CES. But, there are multiple petitions for rehearing pending before the NYPSC seeking to reverse that decision. The City remains optimistic that the NYPSC will accept the arguments advanced in support of including all Canadian renewable resources and open up all opportunities for the State to achieve its 50x30 goal (as well as the broader goal of 80 percent carbon reductions by 2050). The NYISO and the NYPSC should consider the multiple benefits that would accrue from removing the bottlenecks from the Bulk Power System in Northern New York and identify the associated transmission enhancements as a need driven by public policy requirements.⁸

⁵ See, *e.g.*, "Wind Integration Study: Study Results and Final Report," dated June 18, 2010, presented by the NYISO at its Wind Study Workshop; "Growing Wind Final Report of the NYISO 2010 Wind Generation Study", dated September 2010. Both documents are available via the NYISO's web site.

⁶ "New York State Energy Highway Blueprint," issued October 2012, at 67-68; "New York State Energy Highway Blueprint Update," issued April 2013, at 11, 43.

⁷ *Id.*

⁸ The City notes that this request is similar to a proposed public policy need advanced by H.Q. Energy Services (U.S.) Inc. on September 30, 2014 in response to the NYISO's last public policy needs solicitation.

2. The NYISO And The NYPSC Should Start To Consider The Long-Term Changes Required To The Bulk Power System To Accommodate The State's Future Generation Mix

Undertaking the initial planning for new transmission, including any of the NYISO's three planning processes (reliability, economic, and public policy), then seeking siting approval under New York Public Service Law Article VII, and constructing a new transmission line could take seven to ten years or more. Indeed, the NYPSC commenced its AC Transmission Proceeding in 2012,⁹ and it likely will take at least two or three years more before any project selected to address the need identified in that proceeding may receive siting approval under Article VII.

According to the 2016 Gold Book, the summer peak demand in Zone J is over 11,500 MW, and it is expected to increase to over 12,000 MW in ten years. The potential for siting renewable resources in New York City, using current technologies, is very limited. Therefore, replacing reliance on the in-City fossil-fueled generation fleet with renewable resources will require extensive transmission upgrades to and within Zone J. Some of the replacement capacity is likely to come from upstate wind farms and large-scale solar projects. Other replacement capacity could come from Canadian hydropower and wind farms. The third likely large-scale source is offshore wind. Each of these sources will require transmission to bring the power from the generation source to New York City. Moreover, once the power gets to Zone J, a more robust transmission system will be needed within New York City.

The existing Bulk Power System is not adequate to handle the power flows that will be needed to transport upstate renewable energy to downstate load centers. Addressing this deficiency will require both more transmission lines and increasing the voltage limits of existing and new transmission lines from 345 kV to 500 kV, 765 kV, or higher.

Additionally, neither the NYISO nor the NYPSC should impose limitations on the type of projects that can be considered to address public policy needs. High voltage direct current transmission is a proven technology that may be able to deliver large quantities of power over long distances more cost-effectively than alternating current transmission. However, such technology has been summarily excluded from consideration in addressing previously identified transmission needs driven by public policy requirements. The NYISO and the NYPSC should equally evaluate all technology types and select the one that is most cost-effective and capable of transmitting energy from upstate production areas to downstate load centers.¹⁰

⁹ PSC Case 12-T-0502, Examination of Alternating Current Transmission Upgrades, Order Instituting Proceeding (issued November 30, 2012).

¹⁰ Offshore wind farms already routinely employ direct current technology to transmit power from the generation source to shore.

The NYISO and the NYPSC also should avoid imposing unnecessary conditions, such as prohibiting crossings of rivers. Directional drilling is a very mature technology and can allow for river crossings that cause no environmental impacts and have no other adverse effects. Inasmuch as the NYPSC has already approved the construction of a high voltage direct current transmission line in the bed of the Hudson River for much of its length,¹¹ there is no legitimate reason to impose blanket prohibitions on other projects that involve subsurface river crossings.

Moreover, it is important to note that the AC Transmission project, which is intended to minimize the UPNY-SENY constraint, only is addressing the constraint as it exists today. That is, the identified need is to add approximately 1,000 MW of capacity across that constraint. That amount of incremental capacity should be sufficient to unbottle upstate generation based on current usage patterns and system design. However, in order to achieve the renewable goals of the CES, power flows from upstate to downstate will need to be significantly increased. In addition, the retirement of any of the large generating facilities in the lower Hudson Valley could have impacts on power flows, reactive power, transfer limits, and other factors. Although the Transmission Owner Transmission Solutions projects address these impacts, those projects were designed and intended only to address impacts under the system as it currently exists. They are not sufficient to address the impacts that are likely to arise under a paradigm in which significant amounts of renewable resources are added to the system upstate with power flowing downstate. Substantially more transmission capacity across the UPNY-SENY interface will be needed and should be examined as part of the broader approach to transmission planning discussed herein.

While the upstate comprehensive analysis is critical and must occur first, the analysis does not end at the border of Zone J. The reduction or elimination of the UPNY-SENY constraint likely will shift the binding constraint to UPNY-CE, Millwood South, or Dunwoodie South (or some combination of the three interfaces). Moreover, the in-city transmission system was not designed to accommodate the substantially larger power flows from upstate resources that are expected to occur. The entire in-city system likely will need to be reinforced or expanded. Further, when offshore wind is constructed, new transmission lines will be needed from the point at which the wind farms' generator leads come ashore to and into the New York City transmission grid.¹²

¹¹ PSC Case 10-T-0139, Application of Champlain Hudson Power Express, Inc. for a Certificate of Environmental Compatibility and Public Need, Order Granting Certificate of Environmental Compatibility and Public Need (issued April 18, 2013).

¹² On September 15, 2016, the New York State Energy Research and Development Authority released its "New York State Offshore Wind Blueprint," which describes the State's plans for developing offshore wind farms in the New York Bight. Given this development, the question no longer is if offshore wind will be developed, it is when offshore wind will be developed.

Further support for the need for a comprehensive approach to assessing transmission needs can be found in the 2015 New York State Energy Plan (“Plan”), which was prepared pursuant to Section 6-104 of the New York Energy Law. The Plan summarizes the State’s energy-related public policies and provides a plan for achievement of the associated policy goals. The first initiative discussed in the Plan is to expand reliance on renewable resources.¹³ The Plan also establishes three clean energy goals: (1) 40% reduction of greenhouse gas emissions by 2030, as compared to 1990 levels; (2) reliance on renewable resources for 50% of the State’s electric generation by 2030; and (3) 600 trillion BTU increase in energy efficiency by 2030.¹⁴ Even if the third goal is attained, achievement of the first two of these goals indisputably will require, among other things, a substantial expansion of the transmission system to connect the State’s load centers to the locations of renewable resources, as discussed above.

The City respectfully submits that the NYISO’s planning processes, particularly this process, need to take a more holistic approach to addressing the State’s future transmission needs. Rather than examining a single transmission line, or an upgrade of an existing line between two specific substations, the NYISO (and the NYPSC) should more broadly examine how to move large quantities of power from upstate to downstate load centers. Indeed, identifying a single transmission line, or a segment of a line, as a need driven by public policy requirements is insufficient to achieve the State’s public policy goals, and such a piecemeal approach could effectively prevent timely achievement of those goals. A portfolio, or multi-faceted, solution is needed and should be the focus of this process. Accordingly, consistent with the Plan, the CES and the Offshore Wind Blueprint, the NYISO and NYPSC should consider identifying enhancements to the Bulk Power System, generally, as a transmission need driven by public policy requirements.

With respect to the criteria that should be applied to this proposal, the City recommends the same two criteria discussed above plus one more – is the project intended to contribute to achievement of the State’s public policy goals as set forth in the Plan, the CES, and the NAAQS-related State Implementation Plans.

There can be no question that the comprehensive approach to transmission planning and expansion of the transmission system recommended herein would advance and facilitate achievement of the State’s public policies. As discussed above, the State’s own policy statements and supporting documentation also demonstrate the public policy-based need for

¹³ 2015 New York State Energy Plan, Volume 1, issued by the New York State Energy Planning Board, pp. 26-29.

¹⁴ *Id.* at pp. 44-45.

Mr. Zachary Smith
September 30, 2016
Page 8

more transmission throughout the State. Accordingly, the City respectfully submits that the third element of the Notice is satisfied via reference to these materials.

For all of the foregoing reasons, and consistent with the NYISO's own studies, the State's Energy Highway Blueprint, the 2015 New York State Energy Plan, the Clean Energy Standard, and the State's Offshore Wind Blueprint, the City respectfully requests that the NYISO submit the above two proposals to the NYPSC pursuant to Section 31.4.2 of the OATT.

Respectfully Submitted,

COUCH WHITE, LLP

Kevin M. Lang

Kevin M. Lang

NEW YORK CITY
MAYOR'S OFFICE OF SUSTAINABILITY

Anthony J. Fiore

Anthony J. Fiore
Director, Energy Regulatory Affairs



September 30, 2016

New York Independent System Operator
10 Krey Boulevard
Rensselaer, New York 12144

Via email: PublicPolicyPlanningMailbox@nyiso.com

In response to the request for proposed transmission needs being driven by Public Policy Requirements issued by the NYISO on August 1, 2016, H.Q. Energy Services (U.S.) Inc. (“HQUS”) the U.S. subsidiary of Hydro-Québec (“HQ”) hereby submits this proposal defining a proposed transmission need in the state of New York.

Hydro-Québec is one of the largest suppliers of clean energy in North America, operating a system of over 99% renewable resources, comprised largely of hydroelectric generation. Because HQ hydro supply is economically competitive with other renewable resources and environmentally sound (hydropower developed in Québec has a GHG emission profile similar to wind and less than photovoltaic solar on a lifecycle basis¹), deliveries from HQ can be utilized to assist New York to meet a host of public policy objectives, including the increased use of clean and renewable energy consistent with the program objectives associated with the Clean Energy Standard (“CES”)². Because HQ’s hydro fleet can provide both baseload and dispatchable generation, New York can leverage these resources to make significant contributions towards their renewable energy targets, and to help integrate intermittent renewable and distributed energy resources while maintaining bulk system reliability and efficient operations.

As New York looks to implement more aggressive environmental policy objectives for the future, access to incremental renewable resources will be a major determinant in achieving these goals cost effectively. Therefore, HQUS is recommending a Public Policy Requirement be identified for transmission capable of meeting the dual purpose of delivering incremental renewable supply into the New York power grid and relieving transmission congestion for full delivery of existing renewable supply from northern New York to downstate load centers.

Existing transmission interconnections between Québec and New York are often fully utilized (particularly during peak periods), preventing HQ from providing incremental renewable supply to New York when it is needed most in displacing higher emitting resources. Furthermore,

¹ Hydro-Québec, Environnement et développement durable; CIRAIG; Tirado-Seco, 2014, Comparaison des filières de production d’électricité et des bouquets d’énergie électrique, 50 p., annexes. (Study comparing electricity generation options and electricity mixes, available only in French on Hydro-Québec’s website).

² Case 15-E-0302: Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard.

existing HQ interconnections deliver power into a region currently oversupplied with renewable resources. Due to a combination of persistent transmission congestion across central New York and a loss of regional load in the North Country, renewable resources in the this area are forced to compete against one another to deliver energy to load centers across the state. These transmission inadequacies create periods where New York is unable to access the full capability of available renewable resources, resulting in fossil fuel generation being dispatched to serve load which could have otherwise been supplied by clean and renewable supply. Without transmission solutions which create new paths for these renewables, bottling of renewable generation in northern New York is likely to occur more frequently in the future; especially considering the projected decline of local load combined with more wind generation coming online to compete for limited transmission access.

Developing new transmission between Québec and New York and relieving transmission constraints in the North Country will contribute towards New York meeting the goals mandated in the CES and outlined in the 2014 State Energy Plan³ of meeting 50% of the state's energy consumption using renewable resources by 2030 and reducing GHG emissions 40% by 2030.

According to the CES order issued August 1, 2016⁴, New York will require over 29 TWh of incremental renewable energy supply to meet the 50% target by 2030⁵. This 29 TWh requirement could increase if ambitious energy efficiency targets are not met and if New York cannot retain the full amount of supply historically delivered by existing renewable resources into New York. For context, 29 TWh will require New York to procure more than 5 times the renewable energy New York was able to obtain through the NYSERDA Main Tier RPS program from 2005 to 2015⁶.

Hydropower currently represents over 86%⁷ of New York's renewable supply, demonstrating the ability for hydro to play a critical role in contributing to renewable policy goals. Since no new major hydropower facilities are expected to come into service in New York, new transmission projects between New York and Québec will be the most viable path to accessing more hydro supply of scale. HQ operates a system of approximately 37,000 GW of installed capacity, and traditionally exports between 25 and 30 TWh per year (of which only 7-10 TWh has historically been supplied to New York). Hydro delivered over new transmission can be an effective means of making progress towards the 2030 target. For example, a new 1,000 MW DC transmission project can deliver up to 8.7 TWh of incremental renewable energy to New York, nearly one third of incremental renewable energy needed to meet the 2030 target.

New or expanded transmission interconnections between Québec and New York will also allow New York to leverage the dispatchable characteristics of HQ's hydropower fleet in order to more efficiently integrate intermittent renewables into the grid, and maintain bulk system reliability

³ N.Y. State Energy Planning Bd., The Energy to Lead: 2015 New York State Energy Plan 111–112 (2015).

⁴ Order Adopting A Clean Energy Standard, August 1, 2016,

⁵ Order Adopting A Clean Energy Standard, August 1, 2016, Page 85

⁶ New York State Renewable Portfolio Standard Annual Performance Report through December 31, 2015, March 2016

⁷ Staff White Paper on Clean Energy Standard, 2016, Appendix B.

while transitioning to a supply mix comprised of 50% renewable energy. In their supplemental comments in the CES proceeding submitted on July 8th, the NYISO identified the need for new transmission investments to accommodate an increase in renewable resources in New York (expected to largely be developed in the northern and western portions of the state), and deliver these resources to load centers in southeastern New York. These comments reflect the existence of a Public Policy Requirement to relieve transmission congestion in the North Country, and the need to enable the full delivery of available clean and renewable resources.

The NYISO also estimates that the resource mix envisioned by Department of Public Service to meet the 2030 CES target of 50% electricity from renewable resources will result in an increase to the Installed Reserve Margin from 17.5% to between 40 and 45%. While it is difficult to predict the cost impact from such an increase, this shift would likely result in an increased cost to ratepayers from supporting a substantial increase in reserve capacity. This increase may be mitigated through the use of large hydro resources, as the NYISO stated “If the NYISO were to assume long-term committed Canadian hydroelectric imports with historically high performance factors, those resources would put downward pressure on the IRM [Installed Reserve Margin] percentage.”⁸

In addition to CES compliance, incremental HQ hydropower delivered into New York over new or expanded transmission paired with congestion relief in the North Country will provide a number of related environmental and system benefits, including lower compliance costs for federal and regional GHG emission reductions programs (Regional Greenhouse Gas Initiative and Clean Power Plan), improved fuel diversity, lower wholesale energy costs, and increased resource adequacy.

In conclusion, HQUS recommends that the Public Service Commission adopt a Public Policy Requirement for transmission capable of delivering renewable energy supply to New York and relieving transmission constraints in Northern New York. As such transmission projects will allow New York to meet goals identified in the CES, unbundle existing renewables in the North Country, reduce the impact of increasing IRM requirements from a growing penetration of intermittent resources, and improve system performance and costs. Therefore, HQUS is recommending a Public Policy Requirement be identified for transmission capable of meeting the dual purpose of delivering incremental renewable supply into the New York power grid and relieving transmission congestion for delivery of renewable supply from northern New York to downstate load centers.

Respectfully submitted,

/s/ Stephen Molodetz

Stephen Molodetz
Vice President –
Business Development

⁸ Supplemental Comments on the Clean Energy Standard Case 15-E-0302, NYISO, July 8, 2016, page 11

NYISO Planning, Invenergy appreciates the opportunity to provide comment to transmission needs driven by Public Policy Requirements.

In light of the recent NY DPS order calling for 50% renewables by 2030, it is clear additional transmission will be needed to meet the goal. NY will need significant quantities of new wind energy built over the next 10 years in order to meet its 50% renewable goal. Without upgrades to the transmission lines, local overloads will likely cause many of these projects to be curtailed during periods of high wind. Adding transmission in wind development areas will minimize curtailments and enable the state to efficiently meet its 50% renewables goal.

With that in mind, evaluation criteria should first consider the number of potential wind MWs that could be built in an area. As one approach, NYISO could estimate potential MWs using queue requests however a more accurate approach would be to work with NYSERDA or other consultancy to identify wind sites in NY. A third approach would be to interview developers. Use of any and/or all these approaches would be best. Once potential wind areas are identified, NYISO should assign transmission lines these projects would likely connect to, evaluate capacity of these lines and upgrades that would help ensure the connected renewable projects would not exceed the line capacities and estimated cost of upgrades. By taking this approach, NYISO would be in a position to determine if the line should be upgraded and relative cost and benefits to getting renewables to an uncongested part of the system.

Thank you for the opportunity to provide these comments and Invenergy looks forward to continuing the discussion with the NYISO on how to meet the state's renewable goals.

Regards,
Alex

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Response to NYISO Solicitation
of Transmission Needs Driven by Public Policy Requirements

1. Introduction

The New York Power Authority (“NYPA”), Niagara Mohawk Power Corporation d/b/a National Grid (“National Grid”) and Central Hudson Gas & Electric Corporation (“Central Hudson”) (NYPA, National Grid and Central Hudson are hereafter referred to jointly as “Respondents”) submit this filing in response to NYISO’s August 1, 2016 solicitation of transmission needs driven by Public Policy Requirements (“PPRs”).¹ Respondents identify a number of PPRs driving the need for one or more groups of transmission upgrades (“Transmission Needs”). Respondents request that NYISO forward to the New York State Public Service Commission (“PSC”) the Transmission Needs identified below.

2. Executive Summary

Transmission Needs are being driven by a combination of PPRs, including: 1) the PSC’s recent order establishing the Clean Energy Standard (“CES”)² and 2) its REV Order;³ 3) the New York Department of Environmental Conservation’s (“DEC”) implementation of the Regional Greenhouse Gas Initiative (“RGGI”);⁴ and 4) the federal Clean Power Plan (“CPP”).⁵ All these

¹ Capitalized terms used and not otherwise defined herein shall have the meaning ascribed to those terms in NYISO’s Open Access Transmission Tariff (“OATT”) or NYISO’s Market Administration and Control Area Services Tariff (“Services Tariff”), as context requires. The reference to “Transmission” in the context of this submission shall mean “Bulk Power Transmission Facilities” (BPTF) as defined in the NYISO tariffs.

² Case 15-E-0302, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, Order Adopting a Clean Energy Standard (issued August 1, 2016) (the “CES Order”).

³ Case 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Instituting Proceeding (issued April 25, 2014)(“REV Order”)

⁴ See 21 NYCRR Part 507 (2014) and 6 NYCRR Part 242 (2014).

⁵ 40 CFR Part 60, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule, available at: <https://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>

PPRs drive the Transmission Needs identified below. In addition, the Power Authority Act⁶ drives the Northern Transmission Need, as defined below.

The first Transmission Need is to upgrade the transmission system to mitigate transmission constraints affecting, and increase transmission capacity into and through, Northern New York, in order to position the bulk transmission system to: (1) afford full access to clean, renewable generation resources located in Northern New York, including existing wind generation, NYPA's Saint Lawrence – Franklin D. Roosevelt Power Project ("St. Lawrence Facility"), and imports from the Provinces of Quebec and Ontario, Canada, and (2) accommodate incremental in-State and regional renewable resources, as well as load shifts (including possible loss of industrial load in Northern New York), without bottling renewable generation, while facilitating delivery of these resources to the downstate load centers (the "Northern Transmission Need"). All these PPRs, with the exception of the Power Authority Act, may drive one or more similar Transmission Needs to enhance the transmission system in one or more regions of New York to accommodate renewable generation that can be expected to be developed in these regions and facilitate the delivery of its output to the downstate load centers.

3. PPRs

a. The Clean Energy Standard

The CES mandates "that 50% of electricity consumed in New York by 2030 will be generated from renewable resources."⁷ In addition, among other objectives, the CES Order endorses the following mechanism of relevance to Respondents' proffered Transmission Needs:

- Jurisdictional obligations on load serving entities to ensure the procurement of renewable credits generated in New York or delivered into New York;
- Jurisdictional maintenance obligations on distribution utilities to maintain the contributions of older, small, renewable facilities; and
- Continued participation and leadership in [RGGI] and support of universal complementary federal action under the Clean Power Plan.⁸

⁶ Chapter 772 Laws of New York Section 1, 1931

⁷ CES Order at 12.

⁸ Id. at 13.

In particular, the CES Order requires all New York load-serving entities (“LSEs”) “to serve their retail customers by procuring new renewable resources, evidenced by the procurement of qualifying [Renewable Energy Credits].”⁹

Staff of the New York State Department of Public Service (“DPS Staff”) has determined that “slightly more than 33,700 GWh of incremental renewable generation must be added to the State’s fuel mix” in order to achieve the CES goal of 50% renewable by 2030.¹⁰ It is worth noting that the NYISO estimates that in order to meet this target, the CES will require: 1) approximately 25,000 MW of solar capacity, to meet the targets solely with solar resources; 2) approximately 15,000 MW of wind capacity, to meet the targets solely with wind resources; or 3) approximately 4,000 MW of hydroelectric capacity, to meet the targets solely with high availability hydroelectric resources.¹¹ This expected proliferation of renewable resources throughout the State is virtually certain to require increased transmission capacity throughout certain regions of the State.

Historically, New York has relied on large-scale hydropower as the backbone of the State’s renewable supply portfolio, with hydro representing over 86% of the State’s renewable baseline.¹² In order to effectively leverage the use of this existing hydroelectric power in conjunction with incremental non-hydro renewable resources to meet these targets, new transmission connecting these resources to load centers will be required.

The targets outlined in the CES Order will require significant quantities of incremental renewable energy to be delivered to all the load centers in New York, supplied from resources within the State and imported from external control areas. While near-term goals may be met

⁹ Id. at 14.

¹⁰ Staff White Paper on Clean Energy Standard, Department of Public Service, Case 15-E-0302, Jan. 25, 2016 (“CES White Paper”), p. 7.

¹¹ These estimates of new renewable megawatts in New York are calculated based on the historic demonstrated capacity factors for these categories of generators. From NYISO Comments on Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, April 22, 2016.

¹² CES White Paper, Appendix B.

with existing infrastructure, existing intrastate transmission and interties between New York and adjacent regions likely will not be sufficient to physically deliver cost competitive renewable energy supplies needed to meet more aggressive goals in future years. Indeed, the PSC has directed DPS Staff to work with stakeholders “to ensure that the bulk transmission system is sufficiently modernized such that it can fully support the State’s renewable goals.”¹³

b. Reforming the Energy Vision

The PSC has identified six policy objectives for REV: 1) fuel and resource diversity; 2) system reliability and resiliency 3) reduction of carbon emissions 4) system wide efficiency 5) enhanced customer engagement, and 6) market animation.¹⁴ Transmission expansion in Northern New York and other parts of the State will result in increased bulk electric system flexibility and reliability, and will enable a more efficient dispatch of bulk electric system renewable resources. These outcomes complement the PSC’s efforts under the CES and at the distribution level, and support achieving the REV objectives of carbon emission reduction, fuel diversity, system reliability and system efficiency.

c. The Regional Greenhouse Gas Initiative

RGGI is a cooperative effort among nine states – Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont – which seeks to “stabilize and then reduce anthropogenic emissions of CO₂, a greenhouse gas, from CO₂ budget sources in an economically efficient manner.”¹⁵ When renewable assets such as NYPA’s St. Lawrence Facility, upstate wind, or HQ hydropower are constrained and their output is limited, fossil fuel generation must be dispatched, which not only increases carbon and other air emissions, but also drives up the price of RGGI allowances and consumer costs.

¹³ CES Order at p.75.

¹⁴ REV Order at p. 2.

¹⁵ 6 NYCRR § 242-1.1.

d. The Clean Power Plan

When the U.S. Environmental Protection Agency adopted the Clean Power Plan, on December 22, 2015, it took an historic and important step toward reducing carbon pollution from power plants. The CPP requires states to implement carbon emission reduction plans. The carbon reduction achieved by RGGI served as a model for many elements of the CPP. New York State is committed to cutting harmful carbon pollution by 40% by 2030, in part by increasing the penetration of renewable resources.

e. The Power Authority Act

Relieving transmission constraints in Northern New York will effectuate the objective of the Power Authority Act.¹⁶ The Power Authority Act directs NYPA, among other things, to develop, maintain, manage and operate the St. Lawrence Facility “for the creation and development of hydro-electric power in the interest of the people of this state.” Expanded transmission in Northern New York will allow NYPA to more fully utilize the St. Lawrence Facility to generate clean and low cost power in the interest of the people of New York.

4. The Northern Transmission Need

During certain system conditions there is currently a bottling of renewable generation resources at the Bulk Power Transmission Facility level in Northern New York due to the combined impact of the development of wind resources over the past decade and a reduction in industrial load in the region. This situation will be exacerbated by increased penetration of renewable resources, including renewable imports, needed to satisfy the CES and other PPRs. Unfortunately, the transmission system in Northern New York is currently constrained under certain system configurations and cannot fully support the deliverability of renewable imports from Canada and the full output of NYPA’s St. Lawrence Facility, or additional wind generation from projects across the St. Lawrence valley.

¹⁶ Chapter 772 Laws of New York Section 1, 1931

The deliverability of renewable power throughout New York State, but especially to southeastern New York, will be important to ensure that all regions of the State receive the benefits of cleaner generation and reduced air pollution resulting from the CES and the REV initiatives. Expanding the transmission system will be essential to increasing the deliverability of new and existing renewable resources, both within and outside of New York State.

Recent events have increased the likelihood of bottled renewable generation and inefficient market outcomes in the North Country. Factors that have played a role in this congestion include the closure of a large manufacturing facility in the region in early 2015 (Alcoa Reynolds East plant in Massena, NY), as well as the presence of local wind and/or imports in the market in amounts that exceed the transmission system's delivery capability. Internal NYPA analysis using a production costing tool shows that under current system conditions, minor renewable generation bottling occurs in Zone D. Under a scenario in which the industrial load in the region is significantly decreased, bottling of as much as 500 GWh of renewable energy occurs. In an alternate scenario in which load is decreased and CES compliance is modelled along with 500 MW of additional wind, as much as 1,000 GWh of renewable generation in Zone D would be bottled.

Even the current level of renewable penetration in the region is beginning to create inefficiencies and system conditions that limit renewable output. At times the constrained transmission system in the region necessitates the spilling of water at the St. Lawrence Facility and other inefficiencies, including market prices that have reached negative values. That market signal runs counter to the renewable goals and discourages renewable energy development. The possible addition of over 1,000 MW of new wind projects in Northern New York, as reflected in the NYISO interconnection queue, potential increased renewable imports from Canada, and possible additional load reductions could exacerbate transmission constraints in delivering clean, renewable energy and its environmental benefits to the State's load centers.

5. Transmission Need(s) in Potentially Constrained Regions

The circumstances facing new and existing renewable resources in certain other parts of the State (“Potentially Constrained Regions”) are likely to be similar to the conditions existing in Northern New York. Wind generation may face curtailment due to transmission constraints in certain Potentially Constrained Regions as additional renewable resources are developed. Limited capacity to accommodate incremental wind power additions represents a possible impediment to future development in these Potentially Constrained Regions.

The NYISO’s Growing Wind report¹⁷ modelled all of the existing and proposed wind projects at the time, totaling approximately 6,000 MW from land-based wind farms, and concluded that with no upgrades to the existing transmission system, nearly 9% of the energy from wind resources would be constrained across the State. The report also identified areas where local transmission facilities limit wind plant output.

Two such areas were identified as Northern New York and the southern tier region of the State (the “Southern Tier”). Other areas of the State may well be similarly affected. For example, the NYISO interconnection queue reflects nearly 1,000 MW of planned wind resource additions slated for the Southern Tier, with at least four applications pending under Article 10 of the New York Public Service Law related to wind facilities representing over 820 MW under development in this region. The NYISO interconnection queue shows over 1,350 MW of wind resources slated for development in northern New York, 750 MW in western New York, and more than 625 MW in central New York. Each of these Potentially Constrained Regions represents an area in which transmission constraints on the Bulk Power Transmission Facilities (as defined in the NYISO OATT), or transmission issues on the local system that can potentially be ameliorated with new Bulk Power Transmission Facilities, may bottle new or existing

¹⁷ Growing Wind: Final Report of the NYISO 2010 Wind Generation Study, September 2010.

renewable resources or prevent those resources from being able to serve load throughout the State and warrant designation of a Transmission Need.

The deliverability of renewable power from these Potentially Constrained Regions throughout New York State, but especially to southeastern New York, will be important to ensure that all regions of the State receive the benefits of cleaner generation and reduced air pollution resulting from the CES¹⁸ and REV initiatives. Expanding the transmission system will be essential to increasing the deliverability of new and existing renewable resources in one or more of these Potentially Constrained Regions. In addition to the previously mentioned wind study, there are a number of ongoing studies, including the State Resource Plan, which can inform the PSC's independent analysis and determination as to which, if any, Potentially Constrained Regions will warrant transmission upgrades.

Given the time required to design, permit and construct transmission enhancements, and the aggressive schedule driven by the Clean Energy Standard and other PPRs mentioned above, it is important that the PSC move as expeditiously as possible in identifying Transmission Needs. Thus, Respondents encourage the PSC to evaluate, based on its analysis and on information that becomes available via the current studies, whether existing and expected incremental resource additions will create transmission constraints that warrant infrastructure upgrades in determining which, if any, of the Potentially Constrained Regions are areas in which the PPRs discussed above are driving Transmission Needs. As additional information becomes available, Respondents encourage the PSC to establish or declare Transmission Needs driven by PPRs in specific region(s) of the State as promptly as possible, rather than awaiting commencement of a future biennial PPR solicitation.

¹⁸ City of New York comments, Case 15-E-0302 (April 22, 2016) pp. 13-16.

6. Benefits

In its Western PPR Order, the PSC found that relieving persistent transmission constraints and increasing transmission capacity in the vicinity of NYPA's Niagara Power Plant would increase the availability of generation from that facility as well as access to renewable generation via imports from Ontario, and explained that:

Increased dispatch of these renewable and economical resources could produce significant benefits to the State in terms of reduced air emissions and energy costs. Congestion relief may also have significant system reliability benefits, including increased operational flexibility, efficiency, and avoiding the need to maintain generation that would otherwise retire.¹⁹

Most of the benefits that the PSC found would inure to New Yorkers from increased access to renewable resources in the western part of the State are equally available via increasing access to the St. Lawrence Facility and other renewable resources located in Northern New York and the Potentially Constrained Regions. Transmission upgrades in Northern New York and the Potentially Constrained Regions would provide many additional benefits, including the following:

Environmental Benefits - Emissions would fall with the introduction of additional wind and hydro resources, decreasing further as more renewable energy is able to flow downstate. As additional renewable generation is able to flow out of Northern New York and the Potentially Constrained Regions, demand across the State can be met with fewer fossil fuel generators. NYISO modelling has shown that the inclusion of additional transmission in Northern New York will decrease total carbon emissions statewide by approximately one million tons per year.²⁰

Production Cost Savings - Additional transmission capacity would enable renewable generators to run without threat of curtailment, avoiding the need to run costlier and less efficient fossil fuel plants. Analysis performed by a third-party consultant retained by NYPA showed system-wide

¹⁹ Case 14-E-0454, In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs Consideration, Order Addressing Public Policy Requirements for Transmission Planning Purposes (issued July 20, 2015)(the "Western PPR Order"), p. 26.

²⁰ NYISO modelling as part of NYPA's Power Flow Improvement study: scenario 1) modelling an additional 230 kV Moses-Adirondack-Porter line and 700MW injection of hydro from HQ at Dennison, and the scenario 2) modelling an additional 230 kV Moses-Adirondack-Porter line and the AC Proceedings

present value production cost savings of 4% over ten years when a Northern transmission solution was implemented accompanied by 700 MW of additional hydropower resources. In the same study, carbon dioxide emissions across New York State fell by 5% annually over the same ten year period. Savings are also realized through reduced congestion (which can create a need for costlier units to meet local demand), reduced cycling of plants, and avoidance of reliability-must-run conditions.

Fuel Diversity - New York State obtains electricity from a variety of sources including fossil fuel plants, nuclear, and renewable sources such as hydro, wind, and solar. Transmission expansion can provide increased access to power from this diverse portfolio of fuel sources, yielding increased reliability, reduced price volatility and enhanced market efficiency. As New York has become increasingly dependent upon natural gas (in 2015 natural gas represented over 41% of the state's generation mix²¹), the State is investing in renewables as a way to mitigate the potential negative reliability and economic implications of over-dependence on natural gas generation. Ensuring complete access to the State's hydroelectric resources, such as the St. Lawrence Facility, can play an integral role in improving fuel diversity in New York. By maximizing the hydro supply available to New York, the State can also leverage resources capable of providing the reliable and flexible characteristics that the New York power system currently depends on.

Infrastructure Investment Savings - Certain transmission facilities in Northern New York and the Potentially Constrained Regions are at or near the end of their useful lives and will require life extension investments. The New York State Transmission Assessment and Reliability Study ("STARS"), Phase II Study Report identified a potential need to replace nearly 4,700 miles of transmission over the next 30 years.²² Savings can be realized if these investments can be

²¹ 2016 Load & Capacity Data Report ("Goldbook"), NYISO, p. 61.

²² New York State Transmission Assessment and Reliability Study ("STARS"), Phase II Study Report, April 30, 2012

done as part of a comprehensive program that considers future growth of renewables in determining the most efficient approach to transmission system life extensions.

7. Evaluation Criteria

NYISO's August 1, 2016 solicitation indicates that parties identifying proposed Transmission Needs must provide suggested evaluation criteria. Accordingly, Respondents propose the following criteria to be used in evaluating projects proffered to satisfy each of the proposed Transmission Needs:

- Ability to provide increased competition among renewable resources that otherwise might not be simultaneously available to meet load;
- Ability to enable complete utilization of existing and expected future renewable and carbon-free generation resources, including the St. Lawrence Facility, under an array of potential future system conditions (including possible regional industrial load reductions);
- Contribution toward enhancing and refurbishing transmission facilities that are nearing the end of their useful lives;
- Economic benefits, including reduction in Demand\$Congestion and system-wide production costs; and
- The solution's contribution to meeting resource adequacy requirements with the lowest possible Installed Reserve Margin

8. Conclusion

For the reasons set forth above, Respondents request that NYISO submit to the PSC their proposal that the PSC establish the Northern Transmission Need and one or more Transmission Needs addressing the Potentially Constrained Regions.

Respectfully submitted,

Glenn D. Haake

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Dated: September 30, 2016



James A. Lahtinen
Vice President – Regulatory Affairs

September 30, 2016

VIA ELECTRONIC SERVICE

Mr. Zachary Smith
Vice President, System & Resource Planning
New York Independent System Operator
10 Krey Boulevard
Rensselaer, NY 12144

RE: Response to NYISO Solicitation of Transmission Needs Driven by Public Policy Requirements for the 2016-17 Transmission Planning Cycle

Dear Zach:

New York Transco LLC (“NY Transco”) submits these comments in response to the New York Independent System Operator, Inc.’s (“NYISO”) solicitation on August 1, 2016 for proposed transmission needs driven by Public Policy Requirements (“PPR”) for the 2016-2017 transmission planning cycle.¹

NY Transco requests the NYISO to post these comments on its web site and submit them to the New York Public Service Commission (“PSC”) pursuant to the NYISO’s Public Policy Planning Process. As explained below, investment in new and upgraded transmission facilities is being driven by the PSC’s recent order adopting a Clean Energy Standard (“CES”).²

¹ NY Transco was established as a limited liability corporation in 2014 and is owned by affiliates of the New York investor owned utilities.

² Case 15-E-0302 – *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard*, and Case 16-E-0270 – *Petition of Constellation Energy Nuclear Group LLC; R.E. Ginna Nuclear Power Plant, LLC; and Nine Mile Point Nuclear Station, LLC to Initiate a Proceeding to Establish the Facility Costs for the R.E. Ginna and Nine Mile Point Nuclear Power Plants*, Order Adopting a Clean Energy Standard (August 1, 2016) (“CES Order”).

New York Transco LLC
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The CES Order adopted the goal expressed in the State Energy Plan that requires 50% of the electricity consumed in New York to be generated by renewable sources by 2030 “as a foundational basis and essential component of the Clean Energy Standard.”³ The CES Order also requires that every load serving entity in New York procure qualifying Renewable Energy Credits in quantities that satisfy the mandatory minimum requirements established by the order.⁴

It is clear that the CES Order will require a very significant revision of the state’s energy resource mix and infrastructure with a much greater reliance on renewable resources. Since the bulk of electricity generated by renewable resources, such as wind, solar, hydro and biomass resources will be generated in the western and northern regions of New York, and the major load centers are located in the southeastern region of the state, new bulk and non-bulk transmission facilities will be necessary to accomplish the state’s goal. New and upgraded transmission facilities will:

- (i) ensure that renewable resources will not get bottled in local transmission systems;
- (ii) improve the flow in the bulk transmission system to enable both the transfer of renewable energy downstate as well as add additional flexibility into the system to manage the variability of renewable generation; and
- (iii) facilitate delivering lower energy costs to New York customers.

For example, the NYISO 2010 Wind Study recognized that enabling the full energy output from wind facilities in Jefferson County and in the southwestern New York regions, such as Steuben County, would require transmission upgrades in order to deliver that output throughout New York. While such transmission may not necessarily be driven in the short term by system reliability needs, appropriate new and upgraded transmission facilities will improve access and deliverability of renewable resources in support of the state’s goal of 50% renewables by 2030 and contribute to long term reliability. Likewise, transmission is needed to improve access to New York hydro in the St. Lawrence region and other hydro resources.

NY Transco submits that the construction of new and upgraded transmission facilities is necessary to achieve the PPR set forth in the CES Order. New transmission will benefit system reliability, performance and reduced overall costs to customers, by allowing New York to take better advantage of available diverse resources, from within and outside the state to meet the CES. It is important to note that cost-efficient and effective transmission solutions can take five to ten years to develop, assess, validate benefits, construct and place in service. Therefore, NY

³ *Id.* at 78.

⁴ *Id.* at 154.

Mr. Zachary Smith
September 30, 2016

Page 3

Transco is confident the PSC will affirm the need for transmission solutions to effectuate the CES which will trigger the NYISO's Public Policy Planning Process to solicit and evaluate proposed transmission projects necessary to achieve the state's goals.

Sincerely,

/s/James A. Lahtinen

James A. Lahtinen
Vice President – Regulatory Affairs
New York Transco LLC
c/o Consolidated Edison Company
4 Irving Place
New York, NY 10003
(585-724-8353)

/s/Kathleen Carrigan

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September 30, 2016

VIA REGULAR MAIL & EMAIL

Mr. Zachary Smith
Vice President, System & Resource Planning
New York Independent System Operator
10 Krey Boulevard
Rensselaer, New York 12144

RE: Response to NYISO Solicitation of Transmission Needs Driven by Public Policy Requirements

Dear Zach:

This response to the NYISO's solicitation on August 1, 2016 of transmission needs driven by Public Policy Requirements for which the NYISO should solicit and evaluate solutions is submitted on behalf of the New York Transmission Owners ("NYTOs")¹ and the New York Power Authority ("NYPA").

The NYTOs and NYPA request that the NYISO forward our proposal to the New York Public Service Commission ("PSC"), pursuant to the NYISO's Public Policy Planning Process, so that the PSC may consider the proceedings described below as it determines whether Public Policies Requirements are driving the need for transmission² in New York State.

The Clean Energy Standard ("CES")

On August 1, 2016, the PSC issued its Order Adopting a Clean Energy Standard ("CES").³ The order adopted the goal of the State Energy Plan that 50% of the electricity used in New York will be generated by renewable sources by 2030: "as a foundational basis and essential component of the Clean Energy Standard."⁴ The order also required every load serving

¹ Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation d/b/a National Grid, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation.

² The reference to "transmission" in the context of this submission means "Bulk Power Transmission Facilities" ("BPTF") as defined in the NYISO tariffs.

³ ORDER ADOPTING A CLEAN ENERGY STANDARD, CASE 15-E-0302, January 21, 2016

⁴ *Id.* at 154.

entity in New York State to procure qualifying Renewable Energy Credits (“RECs”) in quantities that satisfy the mandatory minimum requirements established by the order.⁵

To achieve the CES goals, New York will need to dramatically increase its reliance on renewable resources. A large proportion of these resources will likely be developed in areas of western and northern New York State, remote from load centers, including the load centers in the more populated southeastern region of the State. New transmission facilities would be necessary so that renewable energy required by the PSC order is not bottled on transmission systems, and can reach load centers throughout the State, including those in downstate regions.⁶

Climate Change and Emissions Policies Driving the Need for Transmission

State and federal regulators have taken actions to address climate change by releasing goals for carbon emissions reductions. The New York State Energy Plan calls for a 40 percent reduction in greenhouse gas emissions in the energy sector, including power generation, industry, buildings and transportation.⁷ The U.S. Environmental Protection Agency’s (“EPA”) Clean Power Plan calls for reductions in emissions from large generators by 2030⁸. Though the EPA’s rule has been placed on hold by the U.S. Supreme Court, compliance goals are scheduled to begin in 2022 and New York State agencies have indicated that they intend to continue developing compliance plans.

New York City Objectives

The City of New York has released its own energy objectives that call for an 80 percent reduction in the city’s greenhouse gas emissions by 2050 and a 35 percent reduction in such emissions from City government by 2025.⁹ While these objectives have yet to be codified into law or regulation thus far, statutory or regulatory changes could be adopted in the future and they will likely be an additional driver behind the development of new renewable resources in New York State and should be considered.

Conclusion

The NYTOs and NYPA submit that the construction of new Bulk Power Transmission Facilities would be necessary to achieve the State’s public policy goals set forth in the PSC order and other initiatives described above. The NYTOs and NYPA request, therefore, that the NYISO submit to the PSC our proposal that the CES and other initiatives described above result in Public Policy Requirements driving the need for transmission in New York State. The specific areas for transmission should become evident as future studies and reports examining the impact of a significant penetration of intermittent renewable energy resources become available.

⁵ *Ibid*

⁶ See, e.g., Draft Supplemental Environmental Impact Statement, PSC CASE 15-E-0302, at 1-3 to 1-6.

⁷ 2015 New York State Energy Plan, Volume 1 at 112, available at <https://energyplan.ny.gov>

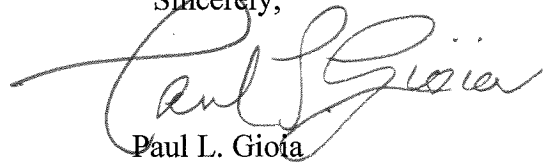
⁸ 40 CFR Part 60, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule available at: <https://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22842.pdf>.

⁹ See One NYC: 2016 Progress Report. Accessed at

<http://www1.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC-2016-Progress-Report.pdf>

Given the time it takes to plan a major transmission facility, complete the NYISO's planning process, achieve all necessary permits including siting authority, and construct a transmission project, the NYPSC should initiate the Public Policy Planning process so the NYISO can solicit transmission solutions to achieve the State's goals. The NYISO should request that the PSC provide criteria to be used by the NYISO in its evaluation of proposed transmission solutions.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul L. Giota". The signature is fluid and cursive, with a large initial "P" and "G".

Paul L. Giota

Counsel to the

New York Transmission Owners and NYPA
Whitman Osterman & Hanna LLP



September 29, 2016

Mr. Zachary G. Smith, Vice President, System and Resource Planning
New York Independent System Operator
10 Krey Boulevard
Rensselaer, NY 12144

Sent Via Email

RE: NextEra Energy New York Comments Regarding Needs Required for the 2016-2017
Transmission Planning Cycle

Dear Mr. Smith:

In response to your August 1, 2016 letter, and pursuant to Section 31.4.2 of Attachment Y to the New York Independent System Operator, Inc.'s ("NYISO") Open Access Transmission Tariff ("OATT"), NextEra Energy Transmission New York, Inc. ("NEETNY") submits the following comments. NEETNY respectfully requests that NYISO solicit and evaluate solutions to facilitate renewable generation to help New York meet the Clean Energy Standard ("CES").

Public Policy Requirement Driving Transmission Need

On August 1, 2016, the New York Public Service Commission issued an Order adopting a Clean Energy Standard ("CES"), New York's primary policy initiative to promote the development of new renewable energy resources in New York.¹ The CES has established a goal whereby 50 percent of New York's electricity is to be generated by renewable resources by 2030. In order to meet this target, NEETNY believes that New York will need to develop substantial new bulk power transmission beyond the needs identified in both the AC Transmission and Western New York solicitations. NEETNY agrees with NYISO's public comments that "a significant build-out of renewable resources will require new or upgraded transmission facilities on both the bulk power system and the sub-transmission systems to deliver the output of these new resources to the southern and eastern portions of New York State, where demand for electricity is greatest."²

Criteria for Evaluation of Transmission Solutions

NEETNY proposes that NYISO evaluate transmission solutions submitted in response to an identified Public Policy Transmission Need ("PPTN"). This will allow transmission providers to compete to offer the best solutions and at the same time reduce project costs for the benefit of

¹Case 15-E-0302, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard; Case 16-E-0270, Petition of Constellation Energy Nuclear Group LLC; R.E. Ginna Nuclear Power Plant, LLC; and Nine Mile Point Nuclear Station, LLC to Initiate a Proceeding to Establish the Facility Costs for the R.E. Ginna and Nine Mile Point Nuclear Power Plants, August 1, 2016 Decision.

²Case 15-E-0302, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, NYISO July 8, 2016 Comments at 4.

New York’s electric consumers. The best way to begin such a process is for NYISO to share as much information about its identified needs as possible with all interested stakeholders.

To start, we believe that a common set of assumptions regarding the location and capacity of assumed renewables should be made available. Regardless of whether the renewable assumptions include new wind generation and solar development in Western New York or Northern New York, or increased imports from Canada, all assumptions should be made public so that all transmission developers can begin on a level playing field. Furthermore, this consistency will enable NYISO to better compare the cost effectiveness of proposals as well as support renewables from both a reliability and market congestion perspective.

NEETNY suggests that NYISO consider the following additional evaluation criteria as it moves forward in the process:

1. Potential and viability for accommodating additional renewable resources on the proposed transmission line, in order to consider the route with the highest use potential;
2. overall cost impact of the project on customers, including the benefits of cost contained bids; and,
3. the extent to which a project will enable and enhance future renewable competition.

In addition, to the aforementioned proposed criteria, NEETNY also offers some additional thoughts on evaluation criteria for NYISO to consider. In order to ensure a more level playing field, when a greenfield solution is proposed to solve a PPTN, NYISO should only evaluate the primary component of a project and not penalize developers who do not propose the most efficient “secondary,” or non-bulk transmission facilities (“NBTF”) fixes. For example, the previous Western New York PPTN resulted in several proposals with a primary component between Dysinger – Stolle Road 345 kV – but with varying secondary components to solve non-BPTF issues. However, the incumbent transmission owners are inherently advantaged to address non-BPTF issues because they alone have the data required to best address those issues. Non-incumbent transmission developers are not privy to the same information as the incumbent transmission owner, and are at a disadvantage when proposing these “secondary” solutions. Therefore, in the event that primary solutions proposed are similar enough, secondary upgrades (especially if to be done by incumbent) should be excluded from evaluation.

Finally, we believe that right-of-way ownership should not be a distinguishing factor. As the New York Public Service Commission (“NYPSC”) has determined, non-incumbent developers should be able to negotiate for the right to utilize the right-of-way which was paid for by utility customers. More specifically, regarding rights- of-way the NYPSC stated that it “expects the utility company owner to bargain in good faith to reach an agreement with the developer of the transmission solution as to property access and compensation as it would for other linear project developers that seek to co-locate on utility property.”³

³Case 12-T-0502, Proceeding on Motion of the Commission to Examine Alternating Current Transmission

How Construction of Transmission Will Fulfill This PPR

The amount of renewable generation required to reach New York's goal of 50% by 2030 will be heavily constrained based on the current state of the transmission network in New York. The construction of new transmission facilities will make it financially advantageous for prospective renewable developers to interconnect to the grid, thereby significantly boosting New York's likelihood of achieving its renewable energy goals.

In addition, upgrades to New York's transmission system are necessary to ensure that all New Yorkers receive the benefits from renewable resources, such as efficiently and reliability providing renewable energy from upstate projects to downstate zones with greater demand.

Thank you for your consideration of NEETNY's comments. Please feel free to contact me if you have any questions with respect to these comments. As a preeminent renewable energy and transmission developer in North America, NextEra Energy and NEETNY look forward to working with NYISO and other stakeholders in helping New York to achieve its renewable energy goals.

Sincerely,

Stephen Gibelli

Stephen Gibelli
Director of Regulatory Affairs, NextEra Energy Transmission

Sent via e-mail to PublicPolicyPlanningMailbox@nyiso.com

Upgrades; Case 13-E-0488, In the Matter of Alternating Current Transmission Upgrades - Comparative Proceeding; Case 13-T-0454, Application of North America Transmission Corporation and North America Transmission, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII of the Public Service Law for an Alternating Current Transmission Upgrade Project Consisting of an Edic to Fraser 345 kV Transmission Line and a New Scotland to Leeds to Pleasant Valley 345 kV Transmission Line; Case 13-T-0455, Part A Application of NextEra Energy Transmission New York, Inc. for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII of the Public Service Law for the Marcy to Pleasant Valley Project; Case 13-T-0456, The Part A Application of NextEra Energy Transmission New York, Inc. for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII for the Oakdale to Fraser Project; Case 13-M-0457, Application of New York Transmission Owners Pursuant to Article VII for Authority to Construct and Operate Electric Transmission Facilities in Multiple Counties in New York State; Case 13-T-0461, Application of Boundless Energy NE, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII for Leeds Path West Project; Case 14-E-0454, In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration, December 17, 2015 Decision (collectively referred to as "NYPSC Need Decision"), at 60. The NYPSC's justification for its determination is that the incumbent utility "is the steward of the property held for the benefit of its ratepayers" and therefore the incumbent should not have any unfair advantage over any other developer.

Proposed Public Policy Requirements

September 30, 2016

North America Transmission, LLC (“NAT”) is pleased to provide these comments in response to the August 1, 2016 Request for Proposed Transmission Needs Being Drive by Public Policy Requirements for the 2016-2017 Transmission Planning Cycle.

New York State is experiencing tremendous change in how electricity is generated, transmitted and consumed throughout the state. The Public Policy Transmission Need (“PPTN”) process is a critical tool to aid in planning a transmission grid that will keep up with these changes, and ensure safe, reliable, and economic service.

In the comments below, NAT identifies certain PPTNs, the Public Policy Requirements driving the need for transmission, proposes criteria for the evaluation of solutions, and describes how the construction of transmission may fulfill the identified Public Policy Requirements.

I. Clean Energy Standard

The most significant public policy in New York State that may give rise to a transmission need is the Clean Energy Standard (“CES”).

The CES satisfies the definition of a Public Policy Requirement under Attachment Y of the NYISO Open Access Transmission Tariff (“OATT”). Attachment Y defines a Public Policy Requirement to include “a federal or New York State statute or regulation including a New York State Public Service Commission (NYPSC) order adopting a rule or regulation subject to, and in accordance with the State Administrative Procedure Act, ... that may relate to transmission planning on [Bulk Power Transmission Facilities (“BPTF”)].”¹ The NYPSC Order Adopting a Clean Energy Standard in Case 15-E-0302 and Case 16-E-0270 issued and effective as of August 1, 2016 (“CES Order”) qualifies as a Public Policy Requirement, and therefore should also be considered a PPTN.² Three elements of the CES may give rise to a PPTN:

- Tier 1 Renewable Resources
- Offshore Wind
- Nuclear Retirements

A. *Tier 1 Renewable Resources*

NAT proposes a multi-step process to identify the bulk power transmission upgrades that may be needed to integrate and deliver Tier 1 Renewable Resources.

The difficult question in defining a PPTN related to the CES is identifying the extent of additional transmission to enable new Tier 1 renewable resources. The CES will require new

¹ NYISO OATT, Attachment Y, Section 31.1.1.

² A PPTN is defined as “A transmission need identified by the NYPSC that is driven by a Public Policy Requirement.” *Id.*

generation resources. These new generation resources may or may not need additional bulk power transmission upgrades, depending on the size and location of new resources relative to the existing system and retiring resources. NYISO has estimated that in order to meet the CES requirements for 2030, New York State may need as much as 25,000 megawatts (“MW”) of solar generation, or 15,000 MW of wind generation, or 4,000 MW of hydro generation.³ The difference in the amount of new generation is explained as:

The relative size of the required capacity additions reflects the different ability of solar, wind and hydro power to generate electricity compared to their installed capacity. For example, 100 megawatts of wind capacity is equivalent to approximately 20 to 30 megawatts of conventional generation due to the variable output of wind turbines.⁴

NYISO has estimated that as much as 1,000 miles of new transmission will be needed to meet the CES.⁵ However, this depends on the specific amount and location of new resources.

The CES Order recognizes the actual transmission needs may be much less than 1,000 miles depending on retirements of existing resources, diversity of resources, offshore resources, and other factors.⁶ New transmission may not be needed for new renewable generation located electrically close to retiring fossil-fueled generation. However, it is not likely that all new renewable generation will be able to piggy-back on transmission capacity freed up by fossil generation due to the difference in capacity factor of the generation. For example, 4,250 MW of solar generation is the energy equivalent (7.4 GWh per year at a 20% capacity factor) to 1,000 MW of coal generation (7.4 GWh per year at an 85% capacity factor). However, all else equal, 4,250 MW of solar generation is not likely to be sited where 1,000 MW of coal generation will retire without additional transmission upgrades. Of course, new transmission may not be needed to the extent this solar or other new renewable generation is sited proximate to load. However, siting proximate to load faces challenges of construction of major new facilities in densely populated areas including land availability, and it is not likely that all new renewable generation will be proximate to load.

The resources that might be developable within the constraints of the existing transmission system may not be the resources that meet the need in the least-cost manner. A co-optimization of transmission and generation is required to identify if and how much transmission may contribute to the least-cost plan. Without co-optimization of generation and transmission, new renewable resources proposed and procured will be subject to transmission constraints which could limit or curtail these resources. The result is a sub-optimal set of resources, and higher costs for consumers. The market can be used to procure renewables in the amounts and locations best suited to meet a 50 by 30 requirement, but procurement without new transmission planning will be subject to limitations of the existing transmission system. The inevitable result would be that the market will not clear efficiently, with much higher costs for customers, with more expensive resource selection, curtailment, and congestion.

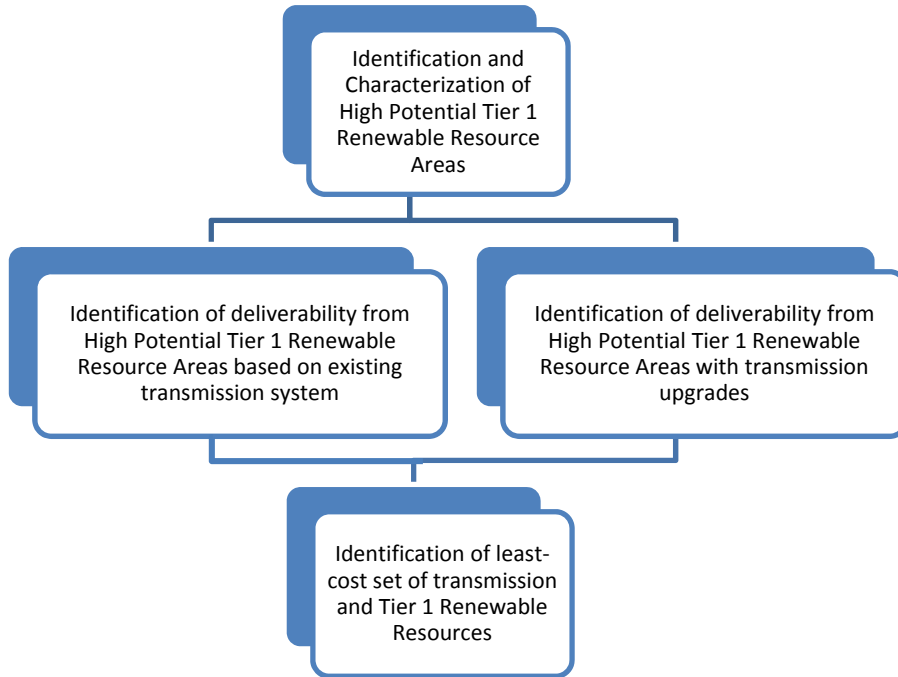
³*Power Trends 2016: The Changing Energy Landscape*, NYISO (July 6, 2016), at 3.

⁴ *Id.*

⁵ Case 15-E-0302: *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard*, Comments of the NYISO (Filed April 22, 2016). Also CES Order at 74.

⁶ *Id.*

A multi-step process will be required to identify the need for and scope of transmission to integrate and deliver Tier 1 Renewable Resources as illustrated in the flow chart below.



This multi-step process is consistent with the CES Order, which recognizes additional analysis is required in the development of the State Resource Plan (“SRP”).⁷ In the CES Order, the NYPSC directed Department of Public Service Staff “to engage stakeholders, including the NYISO, after the initial SRP working group completes its work, to ensure that the bulk transmission system is sufficiently modernized such that it can fully support the State’s renewable goals.”⁸ Declaration of a PPTN for Tier 1 Renewable Resources is necessary to allow for any bulk transmission system upgrades identified in the SRP process to move forward under the NYISO tariff.

After a PPTN has been identified, and transmission has been identified to be desirable to integrate and deliver Tier 1 Renewable Resources, a PPTN solicitation should be issued. The evaluation criteria of such a solicitation would be the more efficient or cost effective delivery, measured as lowest cost per MWh, of incremental renewable generation, and resultant contribution to a least cost resource plan.

The need to establish a PPTN related to Tier 1 Renewable Resources is made more urgent due to the long lead time required for transmission planning and development. In New York State, new transmission completion will not occur until eight to twelve years after initial need identification due to planning, permitting and construction lead times. Assuming an eight year lead time, needs identified today may not be met with transmission until 2024. This means that renewables procured under the CES from 2017 to 2023 will need to be deliverable on the existing transmission system. This includes all resources identified up to the third triennial review in 2022. Assuming a twelve-year lead time implies that transmission needs identified

⁷ CES Order, at 24-25.

⁸ *Id.* at 75-76.

today will not be resolved until 2028. This would mean that all Tier 1 renewable curtailment for almost the entire period up to achieving 50% renewables would need to rely on the existing transmission system, resulting in much higher costs for customers, with more expensive resource selection, curtailment, and congestion.

Waiting until the next cycle under the NYISO tariff, beginning August 1, 2018, could be too late to contribute to a least-cost plan during procurement of Tier 1 Renewable Resources prior to 2030. New York State must move forward now, with a measured approach, to conduct the analysis and processes to ensure implementation of the CES in a coordinated, least-cost manner.

B. *Offshore Wind*

An important subset of Tier 1 Renewable Resources which requires special consideration is offshore wind. With the release of the Blueprint for the New York State Offshore Wind Master Plan,⁹ New York State is taking the national lead in advancing this important industry.

One advantage of offshore wind is deliverability to load centers without significant reliance on the existing bulk power system. However, offshore wind will require significant offshore transmission to collect and deliver offshore wind to the existing grid. In many areas the practice has been for different ownership of offshore wind generation and the associated transmission delivery system. This is the case for the Block Island Wind Farm, with the generation constructed and owned by Deepwater Wind, and the associated sea2shore transmission project constructed and owned by National Grid. In fact, the United Kingdom's Office of Gas and Electricity Markets ("Ofgem") routinely conducts separate tenders for offshore wind generation and offshore transmission. Ofgem has conducted over 20 offshore transmission tenders in 5 rounds, and estimated between \$300-\$600 million savings from the first round of tenders alone.¹⁰

Transmission for offshore wind may fall as a subset of the Tier 1 Renewable Resource needs identified above. Declaring a PPTN for offshore wind will allow for optimal implementation of offshore wind and associated transmission. The evaluation criteria for such a PPTN would be the most efficient and cost-effective proposal to deliver a threshold amount of offshore wind, or the least cost per MWh of delivered offshore wind.

C. *Nuclear Retirements*

A third aspect of the CES that may have transmission implications is the expiration of the Zero-Emissions Credit ("ZEC") in 2029. The ZEC is described as a bridge to the clean energy

⁹ Available at <https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/New-York-State-Offshore-Wind-Blueprint.pdf>

¹⁰ See <https://www.ofgem.gov.uk/electricity/transmission-networks/offshore-transmission/offshore-transmission-tenders/tender-round-1>. Savings estimated between 200 and 400 million pounds during 2011-2012, converted to dollars at 2011-2012 exchange rates.

future, and is contemplated in a series of tranches until March 31, 2029.¹¹ As part of the 2016 Reliability Needs Assessment, NYISO studied a scenario with No Nuclear generation in New York State, which resulted in a Loss of Load Expectancy (“LOLE”) 10 times greater than in the base case, and three times higher than the standard of 0.10.¹² This provides an indication that if all existing nuclear units retire at the expiration of the ZEC program on March 31, 2029, there could be a significant reliability need, depending on where new resources locate between now and 2029. While there is sufficient time to begin planning for this need in 2029, there is also a chance that units may become uneconomic prior to March 31, 2029, even with the ZEC program. At a minimum, it should be a requirement for NYISO to perform further study of the possibility of nuclear unit retirements and the implication for reliability in New York. And, in the event such studies identify a need for new transmission prior to 2024, a PPTN should be established.

II. Other Possible PPTNs

A. *Dunwoodie-Long Island Congestion*

The 2015 Congestion Assessment and Resource Integration Study (“CARIS”) Phase 1 study dated November 17, 2015 identifies \$5.183 billion of Historic Demand\$ Congestion from 2010-2014 from the top 3 constrained paths.¹³

Table 5-2: Historic Demand\$ Congestion by Constrained Paths 2010-2014 (nominal \$M)

Constraint Path	Historic					Total
	2010	2011	2012	2013	2014	
CENTRAL EAST	\$491	\$364	\$255	\$1,089	\$1,136	\$3,336
DUNWOODIE TO LONG ISLAND	\$174	\$230	\$266	\$307	\$155	\$1,132
LEEDS PLEASANT VALLEY	\$232	\$165	\$137	\$138	\$42	\$715

The average congestion from 2010-2014 for these three paths is greater than \$1 billion per year. Two of these paths – Central East and Leeds Pleasant Valley – are being addressed in the AC Transmission PPTN process. However, Dunwoodie to Long Island does not have any identified path to resolution.¹⁴ The PPTN process, however, could provide for resolution of this congestion for the benefit of ratepayers. The evaluation criteria for such a PPTN would be the least overall cost to provide a specified amount of incremental capacity on the identified path to reduce the chronic congestion observed.

¹¹ CES Order, at 50.

¹² See NYISO: 2016 RNA Results, presented September 28, 2016, p. 11, available at, www.nyiso.com/public/media_room/recent_postings.

¹³ NYISO: 2015 Congestion Assessment And Resource Integration Study, November 17, 2015, p. 48, available at, [http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Planning_Studies/Economic_Planning_Studies_\(CARIS\)/CARIS_Final_Reports/2015_CARIS_Report_FINAL.pdf](http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Planning_Studies/Economic_Planning_Studies_(CARIS)/CARIS_Final_Reports/2015_CARIS_Report_FINAL.pdf).

¹⁴ The identification of congestion in the CARIS process itself does not indicate a path for resolution, as no transmission construction has resulted directly from the CARIS process since its inception.

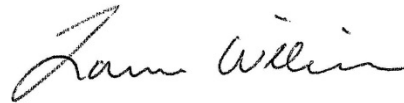
B. *Elimination of New Capacity Zone*

NYISO has conducted examinations of tariff changes to allow for the elimination of capacity zones.¹⁵ NAT is unaware of any specific technical efforts to identify if new transmission construction could allow for elimination of the New Capacity Zone. In other words, tariff changes may be required to create a mechanism to eliminate a capacity zone, but technical analysis should also be performed to identify if new transmission capacity would be an economic alternative to a capacity zone. Some transmission efforts underway, such as the AC Transmission PPTN process to upgrade the Central East and UPNY/SENY interfaces, may provide such benefits, but this has not been studied. Studying this possibility would be the first step in establishing a Public Policy Transmission Need. Such a study would weigh the benefits of reliability and cost savings by eliminating New Capacity Zone requirements against the potential cost of transmission upgrades that would eliminate New Capacity Zone requirements. The evaluation criteria for such a PPTN would be the most efficient and cost effective manner to provide sufficient incremental transfer capacity to provide for elimination of the New Capacity Zone.

III. Conclusion

For the reasons set forth above, North America Transmission respectfully requests that the NYISO include these identified Public Policy Transmission Needs in its submittal to the New York Public Service Commission.

Sincerely,



Lawrence Willick
Senior Vice President

¹⁵ See: [http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2014-10-30/Capacity %20Zone %20Elimination_Final_103014.pdf](http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2014-10-30/Capacity%20Zone%20Elimination_Final_103014.pdf). See also: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-08-23/Elimination%20of%20Capacity%20Zones%2020160823.pdf

Via Electronic Mail PublicPolicyPlanningMailbox@nyiso.com

New York Independent System Operator
10 Krey Boulevard
Rensselaer, New York 12144

Re: Request for Proposed Transmission Needs Being Driven by Public Policy Requirements
for the 2016-2017 Transmission Planning Cycle

Poseidon Transmission 1, LLC (Poseidon) is responding to your August 1st Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2016-2017 Transmission Planning Cycle. Poseidon is the developer of the Poseidon Transmission project, a high-voltage, direct current, transmission facility designed to provide 500 MW of firm transmission capacity between PJM's 500 kV Deans Substation in the heart of eastern PJM and Long Island Power Authority's 138 kV system at its Ruland Road Substation. Among its many attributes, the Poseidon Transmission project enables low-cost wind and solar from PJM to reach load on Long Island. Poseidon's application for a Certificate of Environment Compatibility and Necessity is pending in New York Public Service Commission Case 13-T-0391.

On August 1, 2016, the New York Public Service Commission (PSC) adopted the State's Clean Energy Standard (CES) (Cases 15-E-0302, *et al.*, *Order Adopting a Clean Energy Standard* [August 1, 2016] [*CES Order*]). The *CES Order* directs load serving entities (LSEs) selling to customers in New York to purchase, either from the New York State Energy Research and Development Authority (NYSERDA) or directly from renewable resource owners, renewable energy credits (RECs) in quantities equal to a portion of their New York State loads. NYSEDA will purchase RECs for resale to LSEs through regular solicitations from eligible renewable energy resource owners. Eligible facilities include out-of-state renewable resources that can contractually deliver their output to a New York LSE or otherwise comply with the hourly matching requirement set forth in Appendix A to the *CES Order*.

It is widely accepted that achieving the State Energy Plan goal, “that 50% of New York’s electricity is to be generated by renewable resources by 2030” (*CES Order* at 2), presents a significant challenge. For LSE’s operating in Zones J and K the options for meeting their CES obligations will be limited to purchasing RECs that are generated by resources located in areas remote from Zones J and K, primarily in western and northern New York (Zones A-E). However, the supply of RECs from those areas will be constrained as the deliverability of the energy with which they are associated reaches the limits of the transmission system’s capability to absorb energy into the New York Control Area. Expanding transmission capacity into neighboring control areas that have the potential for developing new renewable resources can significantly add to the available pool of renewable resources. With the appropriate transmission capability, NYSERDA and New York LSEs will have access to a greater supply of competitively-priced RECs sourced from PJM. Access to RECs and their associated energy can be expanded by developing incremental transmission capacity linking downstate (Zones J and K) directly with the PJM control area, a geographic area with a significant advantage over New York for the development of new, competitively-priced, renewable resources. Adding new transmission capability from PJM will facilitate delivery of the associated hourly-matching energy to downstate loads, thereby helping reduce in-state transmission bottlenecks. Access to transmission-enabled, least-cost, renewables is critical for New York State to meet the CES while minimizing ratepayer impacts. The recent study released by the National Renewable Energy Laboratory (*see* <http://www.nrel.gov/grid/ergis.html>) reaches a similar conclusion: across the Eastern Interconnect the development of increased interregional transmission lines will stimulate significant levels of renewable penetration – and at increasingly competitive prices.

The CES is a New York requirement with the force of law, and therefore “transmission planning on the Bulk Power Transmission Facilities” related to facilitating compliance with the CES and achieving its purposes would constitute a Public Policy Requirement. Planning for the expansion of the State’s downstate transmission ties to PJM should be identified as a transmission need driven by Public Policy Requirement. Poseidon proposes that the New York Independent Operator forward to the PSC, and that the PSC determine, that added transmission capacity between Zones J and K and PJM is a transmission need driven by a Public Policy Requirement.

In response to your direction that stakeholders who identify proposed Public Policy Requirements also propose criteria for evaluation of proposed solutions, we recommend the following criteria:

- (a) the proposal's demonstration that it will provide access to a robust supply of renewable resources;
- (b) the proposal's demonstration that renewable energy delivered over its facility will be delivered into New York such that the associated RECs will be eligible for inclusion in New York's CES;
- (c) the proposal's demonstration that it is viable, *i.e.*, capable of being permitted, interconnected, financed and constructed; and
- (d) the relevant experience of the developer of the proposed solution in successfully developing similar projects.

Construction of new transmission capacity linking robust substations in Zones J and K and PJM will provide NYSERDA and New York LSEs with access to a regional source of renewable energy with the potential for producing more renewable resources providing energy at lower costs than in either upstate New York or off-shore Long Island and simultaneously will provide developers of renewable resources in PJM with the ability to participate in New York's RECs market.

Very truly yours,

POSEIDON TRANSMISSION 1, LLC



Clarke Bruno



PPL TransLink, Inc.

September 23, 2016

To: PublicPolicyPlanningMailbox@nyiso.com

Re: Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2016-2017 Transmission Planning Cycle

PPL TransLink, LLC thanks you for the opportunity to offer our views on New York State's transmission needs driven by public policy requirements as solicited in your letter of August 1, 2016. PPL TransLink, an affiliate of PPL Corporation, develops competitive transmission and other electric industry infrastructure projects. An affiliate of PPL TransLink, PPL Electric Utilities Corporation, is a Qualified Developer pursuant to Attachment Y of the New York Independent System Operator's Open Access Transmission Tariff.

The recently adopted Clean Energy Standard (CES), with its aggressive goal for reducing carbon in the use of electricity by New York consumers, creates a significant need for new transmission capacity, including transmission linking the New York Control Area to neighboring control areas with renewable energy resources.

In adopting the CES, the New York State Public Service Commission (NYS PSC) wisely included renewable resources located in control areas adjacent to the New York Control Area as eligible to qualify for CES participation, provided delivery can be assured, including "with documentation of a contract path and delivery of the underlying energy for consumption in New York." *See Order Adopting a Clean Energy Standard*, August 1, 2016, at 106 and Appendix A, p. 7.

Renewable resources that qualify for the CES exist in Quebec, Ontario and Pennsylvania but added transmission ties to those areas will be needed to enable the New York State Energy Research Development Authority to purchase their energy production for delivery into the New York Control Area.

The need for incremental transmission ties to Quebec, Ontario and Pennsylvania that can enable owners and developers of renewable resources in those areas to meet the delivery, measurement, tracking and verification requirements of the CES should be a transmission need driven by a public policy requirement. PPL TransLink proposes that incremental transmission ties to Quebec, Ontario and Pennsylvania should be adopted as public policy transmission needs by the NYS PSC pursuant to Attachment Y.

To: PublicPolicyPlanningMailbox@nyiso.com

September 23, 2016

Page 2 of 2

Very truly yours,

Brian Zickefoose 9/23/2016

Brian Zickefoose, P.E.
Manager, Transmission Development
PPL TransLink, Inc.



PAUL D. NAPOLI
Managing Director and Vice President – Power Markets
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Paul.Napoli@pseg.com

September 30, 2016

VIA ELECTRONIC MAIL (PublicPolicyPlanningMailbox@NYISO.com)

Richard Dewey
Executive Vice President
New York Independent System Operator
10 Krey Boulevard
Rensselaer, New York 12144

RE: Response to NYISO Solicitation of Transmission Needs Driven by Public Policy Requirements

Dear Mr. Dewey:

In response to the NYISO's August 1, 2016 Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2016-2017 Transmission Planning Cycle, PSEG Long Island recommends the evaluation of transmission needs driven by the development of offshore wind resources resulting from recent enactments and initiatives of the New York Public Service Commission ("PSC") and the New York State Energy Research and Development Authority ("NYSERDA"), as further discussed below.

i. CES Order and Offshore Wind Public Policy Requirements

On August 1, 2016, the PSC issued an order establishing the Clean Energy Standard ("CES Order").¹ The CES Order established, among other things, a Renewable Energy Standard (RES) with a goal of 50% of all energy generation coming from renewable resources by 2030. In that regard, the CES Order set an objective "to maximize the potential for offshore wind," and described a vision of "a future...where older, less efficient plants in New York are replaced exclusively with clean energy resources, including higher capacity factor offshore wind and

¹ Case 15-E-0302, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, Order Adopting a Clean Energy Standard (Issued August 1, 2016).

renewable/storage combinations.”² As a first step in this effort, NYSERDA released a Blueprint for the New York State Offshore Wind Master Plan on September 15, 2016.³

In particular, NYSERDA has noted that “[p]otential offshore wind projects in the Atlantic off the coast of New York State are located close to major load (electricity demand) centers, and are expected to produce power during the peak or highest periods of demand.”⁴ Recognizing these benefits in proximity to load, NYSERDA has observed that “offshore wind projects, along with their associated transmission and interconnection investments, can provide value to the electric system and enhance its reliability and resiliency.”⁵

In its Blueprint, NYSERDA has estimated that “New York has 39 gigawatts of clean, wind-driven energy potential off its Atlantic coast—enough to power approximately 15 million homes.”⁶ The development of offshore wind will not occur as a single event but rather is more likely to occur as a phased development over a period of years. A trajectory for such development was presented by the New York Department of Public Service (“DPS”) in its Clean Energy Standard White Paper – Cost Study (“White Paper Cost Study”), in which DPS estimated that 1,000 MW of offshore wind would be needed by 2030 in order to meet the requirements of the Clean Energy Standard.⁷ Moreover, the White Paper Cost Study noted offshore wind is assumed to be a capacity resource and that the cost of transmission upgrades required to yield capacity deliverability should be socialized because such upgrades would “yield substantial

² *Id.* at 18.

³ New York State Energy Research and Development Authority, Blueprint for the New York State Offshore Wind Master Plan (Sept. 15, 2016) (hereinafter referred to as the “Blueprint”). In parallel to the efforts of New York State, the U.S. Bureau of Ocean Energy Management has acted under its authorities pursuant to the Outer Continental Shelf Lands Act to issue a Proposed Sale Notice covering a potential wind energy lease sale of 81,130 acres offshore New York for commercial wind energy development. *See* 81 Fed. Reg. 36336 (June 6, 2016).

⁴ Blueprint at 16.

⁵ *Id.* (emphasis added).

⁶ *Id.* at 4.

⁷ Case 15-E-0302, Clean Energy Standard White Paper – Cost Study, at 279 (April 8, 2016).

reliability co-benefits.”⁸ Recognizing the nexus between offshore wind development and transmission development, the CES Order directed DPS “to engage stakeholders, including the NYISO...to ensure that the bulk transmission system is sufficiently modernized such that it can fully support the State’s renewable goals.”⁹

ii. Potential Transmission Needs for Evaluation

The transmission build-out to accommodate offshore wind will occur both on Long Island and other surrounding areas in New York State. For a Public Policy Requirements evaluation of transmission needs, PSEG Long Island recommends that such evaluation consider, at a minimum, the scale of development contemplated in the White Paper Cost Study, though PSEG Long Island and NYSERDA are reviewing development scenarios that extend as high as 4,000 MW. In all such cases, the offshore wind resources are likely to be distributed to several points of interconnection within Zones K and J, with additional transmission system upgrades being required for deliverability to the rest of the New York Control Area. In addition, as the offshore wind resources grow to supply a significant percentage of the Long Island load, new intertie(s) may be required to reliably handle the interconnection and delivery of offshore wind energy in all conditions. For example, in light load conditions, the Long Island system may become saturated such that it cannot, itself, consume all delivered energy from the offshore wind resources and still maintain reliable operations. In such circumstances, the bulk transmission system on Long Island and in surrounding areas would need to accommodate the movement of such delivered energy into other regions. One potential solution to such scenarios would be the addition of new transfer capability between Zone K and the rest of the New York Control Area, either through significant upgrades to existing cables or the addition of a new intertie(s).

⁸ *Id.* at 150.

⁹ CES Order at 75.

iii. Potential Evaluation Criteria

For evaluation of transmission needs for the CES Order and developing offshore wind, PSEG Long Island recommends that the evaluation of potential transmission needs include the evaluation of key reliability and benefits criteria. First, evaluating such potential transmission needs should incorporate all NERC, NPCC, NYSRC, NYISO, and local reliability criteria. Further, it is equally important to integrate carbon reduction assessments into such analyses – particularly with respect to measuring the relative value, in carbon emissions reductions, of a particular transmission upgrade. To measure such benefits and the realization of carbon reductions, we recommend that the evaluation of transmission needs consider criteria based on savings of carbon emissions.

Conclusion

As detailed above, PSEG Long Island respectfully requests the evaluation of potential for transmission needs to be driven by the development of offshore wind resources. This request is being driven by the CES Order which outlines aggressive goals for the reduction of carbon emissions and the development of alternative renewable resources over the next fifteen years.

You can contact me at 516-222-3547 if you need any additional information.

Very truly yours,

Paul D. Napoli

Paul D. Napoli
Managing Director & VP – Power Markets

cc: David Daly, PSEG Long Island (via e-mail)
Vaughn McKoy, PSEG Long Island (via e-mail)
Tom Falcone, LIPA (via e-mail)
Rick Shansky, LIPA (via e-mail)