

October 2, 2020

VIA EMAIL

Zachary Smith
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RE: Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2020-2021 Transmission Planning Cycle

Dear Mr. Smith:

Orsted U.S. Offshore Wind (“Orsted”) hereby submits these proposed transmission needs in response to NYISO’s August 3, 2020 above referenced notice issued pursuant to Section 31.4.2 of the NYISO Open Access Transmission Tariff (“OATT”).

Policymakers have set New York on a much-needed new course that will significantly transform the state’s power system to help address the climate crisis and provide critical economic opportunities. Orsted believes that offshore wind represents an unparalleled opportunity for New York to help the green transition of its power system. Offshore wind’s ability to provide essentially baseload power will also help New York’s power system accommodate technologically and geographically diverse renewable energy resources.

New York’s requirement to procure at least 9,000 MW of offshore wind by 2035 drives the need to upgrade and update the state’s bulk transmission system. Orsted believes the proposed transmission needs, outlined below, are driven by Public Policy Requirements and compel NYISO to solicit and evaluate transmission solutions in its 2020-2021 Transmission Planning Cycle.

Mandated Offshore Wind Generation Will Need Transmission Upgrades

Upgrades to the transmission system are needed to accommodate the development of offshore wind to relieve existing constraints and to serve load growth in New York. The broad parameters of the need to upgrade the existing transmission system to accommodate future offshore wind power generation are well known. NYISO’s [2019 Congestion Assessment and Resource Integration Study](#) (“CARIS”), published in July 2020, shows potential congestion on the transmission system that could impact the development of offshore wind and in turn, the ability of the state to achieve the Climate Leadership

and Community Protection Act (CLCPA) offshore wind mandates. Specifically, the recent CARIS anticipates significant curtailment of offshore wind resources in the New York City (NYSIO Zone J) pocket “due to the wind resources being mostly located upstream of the 138 kV and 345 kV transmission corridors.” The 2019 CARIS goes on to note “The majority of the OSW curtailment results from the injection at the Freshkills substation in the Staten Island load pocket, which is constrained by the 138 kV facility from Freshkills to Willow Brook. The study also shows that the OSW resources are much higher than the load in the Staten Island load pocket, as well as being constrained by the identified transmission facilities. Accordingly, the OSW resources cannot be transmitted out of the load pocket.”¹

Similarly, the CARIS shows curtailment of offshore wind in the Long Island (NYISO Zone K) area due to “the new wind resources being mostly located upstream of the 138 kV transmission corridor.” And, “The majority of the OSW curtailment on Long Island results from the injection at Holbrook substation that is constrained by the 138 kV facility from Holbrook to Ronkonk.”²

In addition to the constraints outlined above, the state needs to ensure that future load growth can be accommodated. Upgrading the transmission system to allow more clean offshore wind to reach market is necessary. In NYISO’s 2020 Gold Book, the long-term energy use forecast anticipates load growth due “in part to increasing impact of electric vehicle usage and other electrification especially in the later years.”³

Orsted’s Analysis of the New York Transmission System Supports the Need for Major Upgrades

In addition to the electrical constraints identified by NYISO’s CARIS, Orsted has identified the following issues that support the need for major upgrades to the New York transmission system:

- There currently exists a lack of available physical (real estate) and electrical points of interconnection that will allow large amounts of offshore wind generation to access the New York power system. These electrical and physical limitations may be exacerbated by the injection of additional amounts of Canadian hydro power. The potential for Long Island to be a focus of onshore interconnection is limited because it is electrically isolated from the New York City area.
- There is currently significant limitations for offshore wind assets to access to New York City Load (Zone J) and connect directly into the strongest parts of the high voltage system, This is in part due to limited space for cables under or around the Verrazano Narrows Bridge; the high population density making onshore access challenging.,
- The existing offshore wind lease areas are likely to be insufficient to serve the anticipated growth of the offshore wind industry to serve the public policy goals of the east coast states. If additional lease areas are not available in the near term, and the risks associated with interconnecting to New York City are seen as too high by individual developers, there is a

¹ CARIS at page 99.

² CARIS, at page 100.

³ Load and Capacity Data report (“Gold Book”), April, 2020, at page 2.

potential risk that existing lease areas could be used to serve offshore wind procurements from neighboring states.

- The only way to ensure that the levelized cost of energy from offshore wind generators (and other renewables) continues to decline in the future is to resolve interconnection challenges.
- Future offshore wind bids into New York will need to reflect the costs associated with interconnection risks and challenges unless they can be resolved with public policy transmission projects.
- System reliability can be enhanced by linking geographically distant offshore wind farms. A robust transmission system with key components on- and offshore will assist the system operator to make more efficient dispatch decisions. This will be critical as the state moves forward with the emission reduction mandates from the CLCPA.
- The need to improve overall system resilience can be enhanced with offshore transmission resources. Significant upgrades to the transmission system, both on- and offshore will help improve the resilience of the bulk power system in New York. This will help the system ride through the increasing frequency and severity of storm events and the changes in load due to the electrification of the transportation and heating sectors.

Orsted Envisions A Bold Transmission System to Serve New York’s Public Policy Needs

To match the nation’s most ambitious offshore wind generation requirements, Orsted envisions an equally impressive offshore and onshore transmission solution. Such a solution would help address the needs identified above and provide an opportunity for economic development as we recover from the global pandemic.

There are two ways to get offshore wind power to market. The first is known as a generator lead line (GLL, and sometimes referred to as a “radial” line). It involves a direct connection by transmission cables from the offshore wind project to the onshore grid. The first few offshore wind projects in the US (located off the coast of Massachusetts, New York, New Jersey and Maryland) all will connect via a GLL. Under this approach, the offshore wind developer alone is responsible for the GLL, including its design, construction and ownership. The GLL is included in the price bid into a state solicitation. As a general rule, if there exists sufficient capacity at the onshore grid point of interconnection (POI), then a GLL is the faster and cheaper solution, with limited risks and is preferred by the ratepayer.

The other transmission option for offshore wind involves an independent or backbone offshore transmission system (also called a or “shared” or “networked” system) to which developers can connect. The backbone collects energy from one or more offshore wind farms and brings that power to shore. Backbone transmission systems can be owned by transmission companies, offshore wind developers, or other businesses. To date, there are no offshore wind backbone transmission lines in the US, but some exist in Europe.

The third option is to incentivize overbuilding of transmission or transmission related infrastructure such as ducting; to minimize impacts to communities and the environment.

New York can look to its New England neighbors for guidance here. Massachusetts legislation required that state to analyze the potential for soliciting an independent or backbone offshore transmission system. One of the key facts that Massachusetts regulators relied upon in determining that there was not currently a sound case for a state-sponsored solicitation for an independent or backbone transmission system was the fact that ISO New England's analysis indicated that there was sufficient capacity on the onshore transmission system to incorporate approximately 5,800 MW of offshore wind without the need for significant transmission upgrades. Since this amount is nearly identical to the existing New England states offshore wind procurement goals, there was not a pressing need for a shared transmission system in that region.

Ørsted believes that in the long-term, a backbone or independent transmission system is very likely going to play a large role as states drive the buildout offshore wind. This is particularly true in areas like New York, with limited points of interconnection and limited real estate options for onshore transmission development. The use of a backbone offshore wind transmission system or some form of shared infrastructure could help keep the levelized cost of energy (LCOE) from offshore wind resources lower than they would be if offshore wind developers need to also build expensive transmission upgrades via a GLL approach.

As offshore wind transmission options evolve, Ørsted urges policymakers to consider developing solutions to the following near-term concerns of backbone or independent offshore wind transmission resources:

- The need for revenue and risk allocation mechanisms to protect offshore wind developers from lost revenue in the event of backbone failures;
- Siting backbone transmission in locations that accommodate geographically diverse lease areas; and
- Developing physical interconnection standards that can be factored into project design and cost in advance of project bids.
- A shared transmission may also be a key step to open the OSW market to off-taker customers in the NYS area in the long term; leading to a more competitive and decentralized market

Ørsted believes that an offshore wind public policy transmission solution should include the following:

- Address the physical challenges of interconnecting to New York City, such as bridges and other existing ocean uses;
- Encourage shared infrastructure for offshore wind developers (where appropriate and given necessary protections outlined above);
- Provided the flexibility to be built in phases; to match offshore wind generation development; and minimize risk of overbuilding, and
- Minimize high-cost onshore transmission upgrades to the extent possible.

As outlined in the NYISO's August 3, 2020 notice, public policy need submittals must:

1. Identify the Public Policy Requirement(s) that the party believes is driving the need for transmission;

In 2019, New York enacted the CLCPA.⁴ That ground-breaking statute codified the state's greenhouse gas reduction requirements and mandated the procurement of at least 9,000 MW of offshore wind generation by 2035. As noted above, the existing transmission system is not cable of adding this much power. Therefore, in order to meet the legally binding mandates for the procurement of at least 9,000 MW of offshore wind generation to interconnect to the New York transmission system, upgrades are needed.

Additionally, in 2020 New York enacted the Accelerated Renewable Energy and Community Benefit Act. This law provides additional evidence that transmission upgrades for offshore wind are consistent with public policy requirements. Specifically, the Accelerated Renewable Energy and Community Benefit Act itself recognizes that:

“A public policy purpose would be served and the interests of the people of the state would be advanced by directing the public service commission to make a comprehensive study of the state's power grid to identify distribution and transmission infrastructure needed to enable the state to meet the CLCPA targets, and based on such study, develop definitive plans that: (a) provide for the timely development of local transmission and distribution system upgrades by the state's regulated utilities and the Long Island power authority; (b) identify bulk transmission investments that should be undertaken, including projects that should be undertaken immediately and on an expedited basis in cooperation with the power authority of the state of New York; and (c) otherwise advance the policies of this act.”⁵

Finally, a recent decision by the Federal Energy Regulatory Commission⁶ limited the ability of offshore wind developers interconnecting into Zone J to receive capacity payments from the wholesale market. This recent policy shift from FERC, combined with the looming phase out of federal tax credits for offshore wind developers, will likely result in New York ratepayers spending more for offshore wind. A public policy transmission solution that allows offshore wind developers to more easily and cost effectively interconnect to the strong bulk power system in Zone J will help to counteract the unfortunate effects of these federal policies.

2. Criteria for the evaluation of transmission solutions to that need;

Orsted believes that the evaluation criteria should favor transmission solutions that:

- Facilitate access to the New York bulk power system through pre-defined cable routes;
- Offer modularity for future expansion;
- Offer a reliable construction plan designed to avoid delays;
- Provide risk reducing provisions that compensate offshore wind generators in the event delays prevent entry into the market;

⁴ Chapter 106 of the laws of 2019.

⁵ Chapter 58 (Part JJJ) of the laws of 2020.

⁶ FERC Docket ER16-1404-001, et al,

- Increase NYISO system reliability and resilience;
- Provide a large amount of interconnection capacity, enough to cover more than one project (e.g. >4GW);
- Provide a turnkey connection for developers: Plug and play approach to interconnection of offshore wind;
- First establish near- and on-shore power corridor(s) and focus on offshore grid optimisation later to avoid onshore bottlenecks (e.g. Help resolve interconnection issues between New York (Zone J) and Long Island (Zone K));
- Address both short- and medium-term offshore wind development needs:
 - Short-term solutions would address the needs to connect existing offshore wind contracts and those located in the Massachusetts/Rhode Island wind lease area and on the next New York bids; and
 - Medium-term solutions would focus on integrating offshore wind into the grid as well as other benefits like reliability and resiliency;
- Value the experience and know-how of companies with long track records of developing successful offshore wind generation and transmission projects and involve them in state studies;
- Demonstrate benefits to environmental justice communities.

Orsted also believes the evaluation criteria should allow for a fair, transparent, and neutral competitive solicitation. Subject to reasonable confidentiality requirements, the exchange of system information necessary to respond to needs should be required. For example, in the Alternating Current Public Policy Transmission Need ,the Commission directed developers to utilize existing utility rights-of-way and to consider the benefits of replacing aging infrastructure. Should the Commission adopt a similar approach, the Commission should require the transmission owners to share such information.

3. Describe how the construction of transmission will fulfill the identified Public Policy Requirement(s).

Simply put, the only way the legal requirements of the CLCPA, including the development of at least 9,000 MW of offshore wind generation by 2035, can be effectuated is with significant upgrades to the bulk power system. As outlined above, the existing transmission system will be unable to reliably and cost effectively deliver offshore wind power to load without new transmission assets. The magnitude of the problems associated with the development of at least 9,000 MW of offshore wind power do not allow for other solutions, such as mere capacity additions to existing substations or existing transmission lines. In addition, Orsted believes that the requirements to develop and deliver 9,000 MW of offshore wind to not lend themselves to “non-transmission alternatives.” If compliance with the CLCPA is to be achieved, significant new transmission is necessary.

Finding optimal transmission solutions to allow offshore wind power to be integrated into the New York grid takes on added importance given the limited lease areas currently available for development. Neighboring states are also aggressively pursuing offshore wind. Space in the lease areas identified for Massachusetts/Rhode Island and New Jersey is becoming scarce. New York needs to focus on the New York Bight areas and begin planning for transmission options to ensure both the physical and electrical space exists to support at least 9,000 MW of offshore wind.

Conclusion

The potential benefits of a robust and far-sighted public policy transmission projects extend well beyond the offshore wind industry. New York is indeed poised to reap critical reliability and resilience benefits for the entire NYISO system. In this sense, the offshore wind industry and associated public policy transmission will open an entirely new dimension for the New York power system. Orsted urges NYISO, the Public Service Commission and NYSERDA to act quickly and move forward with a solicitation for public policy transmission. In the past, public policy transmission projects have been selected to help integrate onshore wind and solar projects in upstate New York. These include: Western New York (Empire State Line by NextEra Energy Transmission New York, Inc.), AC Transmission Segment A (Segment A Double Circuit by LS Power Grid New York, LLC and NYPA), and AC Transmission Segment B (Segment B Knickerbocker-PV by National Grid and New York Transco).⁷ Orsted feels that the time is right now to look at transformative public policy transmission projects that will enable the state to reach its offshore wind procurement requirements.

Respectfully submitted,



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⁷ Id, at page 5.