OCEAN WINDS

March 22, 2021

Hon. Michelle L. Phillips, Secretary
State of New York Public Service Commission
Three Empire Plaza
Albany, NY 12223-1350

Via email to: Secretary@dps.ny.gov

Re: Case 20-E-0197
In the Matter of *Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act*
Comments re: Jan. 19, 2021 Initial Report on the New York Power Grid Study

Dear Ms. Phillips:

OW North America LLC (OW North America) appreciates the opportunity to provide comments to the New York Department of Public Service Staff (NY DPS) regarding the Initial Report on the New York Power Grid Study (the Study).

OW North America supports New York's ambitious offshore wind goals of 9,000 MW by 2035. Offshore wind is key to meeting New York's clean energy goals in a cost-effective and timely manner. We commend the NY DPS and all others involved in the Study and are encouraged by the NY DPS's approach to seek active engagement from industry.

The Study highlights an approach to offshore wind transmission and a number of additional efforts likely needed to achieve the clean energy goals including: acceleration of local transmission & distribution upgrades, carefully planned cable corridors into New York Zone J, expansion of the Long Island bulk transmission system, identification of substations to support the interconnection of offshore wind (OSW), and carefully-planned storage deployment coordinated with OSW and land-based renewable generation interconnection needs[1]. Each of these efforts in themselves require much thought and planning to ensure the optimum outcomes for the State of

[1] New York Department of Public Service Staff, New York State Energy Research and Development Authority Staff, The Brattle Group, and Pterra Consulting (2021). *Initial Report on the New York Power Grid Study.* (Pg. 2) http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={E41D6A17-1EA5-47D3-90E8-A4E981705FE3}

New York, and for offshore wind developers who are actively investing in interconnection plans for future lease auctions and solicitations.

Local Transmission & Distribution

Based on the New York load center and NYSERDA's offshore wind solicitation requirements, OSW developers propose to interconnect to the NYISO grid via Zones J (New York City) & K (Long Island). These two load zones are already constrained due to lack of sufficient infrastructure to support major injections of new generation. This is evidenced by the 345 kV network, one of the more suitable voltage levels for large injections, not extending east past East Garden City as noted within the Study. OSW developers seeking to interconnect further east on Long Island must choose a 138 kV substation as the Point of Interconnection (POI). The power must then flow along a radial transmission system west to East Garden City with high electrical losses before it is able to be stepped up to a higher voltage level and efficiently transmitted on the bulk-power system.

As of the date of this letter there are more than a dozen OSW Interconnection Requests (IRs) identifying POIs in Zone K at the 138 kV voltage level totaling nearly 16 GW[2]. Without significant investment in the transmission network it will not be possible to realize all this generation as capacity limits on the existing 138 kV network will be reached well before the bulk of that new generation is interconnected. The utilities should seek to accelerate investment in *"off-ramp"*[3] projects, which will better enable New York to meet its clean energy goals. However, addressing constraints on the onshore transmission network alone will not support the advancement of OSW interconnection.

Suitable POIs

A number of POIs in Zones J and K are identified in the Study. However, it is not clear if these POIs are intended for further development to accommodate OSW, or if there will be any consideration of these specific POIs in the development of an offshore transmission network. OW North America requests clarity around planning and development timeframes to maximize the utilization of these POIs.

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[2] *NYISO Interconnection Queue as of March 20, 2021*

[3] New York Department of Public Service Staff, New York State Energy Research and Development Authority Staff, The Brattle Group, and Pterra Consulting (2021). *Initial Report on the New York Power Grid Study.* (Pg. 18) http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={E41D6A17-1EA5-47D3-90E8-A4E981705FE3}

Offshore Transmission into New York City

Delivering power from OSW projects through the New York Harbor is a known constraint and has been identified in various publications[4]. The Study recognizes this limitation as well and notes it is likely only four more cables could be routed through the Narrows into New York's inner harbor. OW North America agrees with the Study in that it will be essential to optimize the current carrying capability of these cables to ensure the maximum amount of generation can be delivered to New York City. However, there is little discussion within the Study, or from a regulatory perspective, on how to optimize these cables beyond stating that advanced transmission technologies, such as dynamic line ratings (DLR), can be used[5]. NYSERDA recently announced its plans to perform additional nearshore studies on cable routing through New York Harbor and the Long Island Sound with preliminary results in Q2 2021[6]. The scope of that study is not yet known, but should include in-depth analysis of advanced transmission technologies, such as DLR, to maximize the delivery of OSW generation. This technology is already in use in Europe and is highly recommended to be seriously considered[7].

Another proposed method identified in the Study to maximize delivery of new generation would be to transmit the power to shore on shared transmission infrastructure. This coordinated approach to offshore transmission infrastructure development will require a careful regulatory and contractual framework to appropriately, transparently, and realistically allocate risks and liabilities between the offshore wind farm owner(s) and the offshore transmission owner(s). The Study references such an approach in its discussion of a meshed offshore configuration, as discussed more below. OW North America considers this approach a viable option demonstrated in other jurisdictions, but seeks further detail in order to plan for such an approach in upcoming solicitations.

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[4] The Brattle Group (August 2020). *Offshore Wind Transmission: An Analysis of Options for New York.* http://ny.anbaric.com/wp-content/uploads/2020/08/2020-08-05-New-York-Offshore-Transmission-Final-2.pdf

[5] New York Department of Public Service Staff, New York State Energy Research and Development Authority Staff, The Brattle Group, and Pterra Consulting (2021). *Initial Report on the New York Power Grid Study.* (Pg. 98-9). http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={E41D6A17-1EA5-47D3-90E8-A4E981705FE3}

[6] NYSERDA Presentation to M-TWG on March 10, 2021.

[7] ENTSO-E - European Network of Transmission System Operators for Electricity. (2019, March 21). *Smart grid world of innovations: Dynamic Line Rating Webinar* [Video]. YouTube. https://youtu.be/C6LP363zSmo

Radial vs. Meshed

As a non-incumbent OSW developer in the New York and Mid-Atlantic region, the current generator lead-line interconnection approach presents a number of challenges as the majority of coastal, easy to access POIs are already designated for existing projects under development. This is recognized in the Study through the recommendation to consider development of a centrally coordinated offshore power grid. Such a centrally coordinated offshore grid would provide several benefits, and the Study offers a few examples with a recommendation to perform more in-depth analysis. OW North America supports this recommendation, but does not necessarily agree that any decision to implement a centrally coordinated system can be delayed. Such an approach would be reactive, rather than proactive, and may not address the needs of OSW projects in the timeframe required. We urge the NY DPS to consider implementation of any offshore transmission solution as soon as practicable to avoid the ineffective use of scarce cable corridors and onshore POI availability, as well as any delays to interconnecting new generation.

As noted in the Study, one way to optimally utilize the available limited corridors and POIs is to maximally exploit their potential capacity within the limits of state-of-the-art technology by transmitting the power of multiple wind farms on shared transmission infrastructure. As commented earlier, such coordinated approach to offshore transmission infrastructure development will require a careful regulatory and contractual framework to appropriately, transparently, and realistically allocate risks and liabilities between the offshore wind farm owner(s) and the offshore transmission owner. OW North America thus recommends NY DPS clarify implementation of a centrally coordinated approach through consideration of the following issues:

- Non-discriminatory access (transmission capacity allocation) to the offshore transmission infrastructure
- Liability for lost income due to delayed realization of offshore transmission capacity
- Liability for lost income due to planned and unplanned unavailability of offshore transmission capability beyond reasonable industry standards
- Coordination of maintenance outages
- Ownership interface between offshore wind farm owner and offshore transmission owner
- Exchange and coordination of design information and models to ensure compatibility of interface
- Exchange of measurements and control signals
- Access of offshore wind farm owner to offshore transmission facilities for the purpose of installation, testing, and operation of array cables up to interface.

- Due to the expected significant time required to realize such a meshed grid, and in cases where the offshore wind farm will already have been built and connected to an existing POI prior to a finalized plan or construction of a potential meshed network by transmission owner(s), will (or should) there be a mechanism to differentiate between projects which are designed/built compatible with such a grid versus projects with a simple radial transmission without provisions to be connected to the meshed network?

In the Netherlands[8], Belgium[9] and Germany[10], offshore transmission infrastructure shared by multiple offshore wind farm owners has become the norm. The situation in these countries resembles the New York situation in the sense that they have populated and constrained coast lines, limited cable landfall opportunities and few suitable onshore POIs. They have high population densities and large offshore wind potentials. In early phase offshore wind developments, the offshore wind farm developer built and operates the transmission link to shore. Today, to build scale and unlock the offshore potential, a coordinated approach was taken and national transmission system operators have been appointed by the national governments to plan, build, own and operate coordinated offshore transmission infrastructure in lock step with the offshore wind lease area tenders. This example of coordinated approach illustrates the optimal utilization of limited opportunities to integrate the offshore wind energy into the onshore grid, thereby guaranteeing the feasibility and realization of the offshore wind targets, minimizing costs, environmental impact, and adverse impact on local communities[11].

OW North America supports the comments submitted by the New York Offshore Wind Alliance (NYOWA) regarding these and other issues related to the Study. As a leading voice for the offshore wind business community, NYOWA advocates for the responsible development of offshore wind power for New York. The views expressed

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[8] Ministry of Economic Affairs and Climate Policy, Netherlands (May 20, 2020). *Development Framework for Offshore Wind Energy*. https://english.rvo.nl/sites/default/files/2020/06/Development%20Framework%20Offshore%20Wind%20Energy%20-%20spring%202020.pdf

[9] Elia Group (2021). *Modular Offshore Grid.* https://www.elia.be/en/infrastructure-and-projects/infrastructure-projects/modular-offshore-grid

[10] Tennet TSO GmbH (January 2020). *Energy from land to sea.* https://www.tennet.eu/fileadmin/user_upload/Our_Grid/Offshore_Germany/2020_From_Sea_to_Land_Webversion.pdf

[11] PROMOTioN – Progress on Meshed HVDC Offshore Transmission Networks (April 2019). *Designing the Target Legal Framework for a Meshed Offshore Grid.* https://www.promotion-offshore.net/fileadmin/PDFs/D7.2_Designing_the_Target_Legal_Framework_for_a_Meshed_Offshore_Grid.pdf

are largely those of the industry participants, and largely align with those of OW North America.

We welcome continued engagement with the NY DPS and other industry participants in addressing these complex technical issues, and look forward to continuing to work with New York to aid the state in realizing its offshore wind ambitions.

OW North America is a wholly owned subsidiary of OW Offshore, S.L (OW), a 50:50 offshore wind joint-venture, owned and created by EDP Renováveis S.A. (EDPR) and ENGIE S.A. (ENGIE) in 2019. Both companies believe that offshore wind energy is becoming an essential part of the global energy transition, leading to the sector's rapid growth and increased competitiveness. That is why they have included all their existing and pipeline offshore portfolio in the new company.

OW has a strategic advantage and is well positioned to play a leading role in the offshore market. EDPR and ENGIE are combining their offshore wind assets and project pipeline in OW, starting with a total of 1.5 GW under construction and 4.0 GW under development, with the target of reaching 5 to 7 GW of projects in operation or under construction and 5 to 10 GW under advanced development by 2025. OW primarily targets markets in Europe, the United States and selected geographies in Asia, from where most of the growth is expected to come.

If you have any questions, please feel free to contact me at enrique.alvarez-uria@oceanwinds.com.

Sincerely,

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OCEAN WINDS

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