



March 12, 2021

BY ELECTRONIC SUBMISSION

New Jersey Board of Public Utilities
44 South Clinton Avenue, 9th Floor
Post office Box 350
Trenton, NJ 08625

**Re: QO20100630: In the Matter of Offshore Wind Transmission
Post Technical Conference Comments of Equinor Wind US LLC**

Equinor Wind US LLC (“Equinor”), in its capacity as service operator of OCS Leases A-0512 and A-0520, is pleased to provide these comments to the New Jersey Board of Public Utilities (“NJ BPU”) on the February 26, 2021 Offshore Wind Transmission Technical Conference. Equinor appreciates the New Jersey Board of Public Utilities’ (“BPU”) commitment to fostering the offshore wind sector's growth and development.

New Jersey’s decision to formally request that PJM Interconnection, LLC (“PJM”) incorporate the state’s offshore wind goals into the PJM transmission planning process through the State Agreement Approach (“SAA”) represented a significant step forward in the continued evolution and development of the offshore wind sector. Equinor supports the BPU’s continued commitment to ensuring that offshore wind resources are connected to the grid in an efficient, cost-effective, and environmentally responsible manner that reduces uncertainty and cost for offshore wind developers and the state.

The NJ BPU’s framework for developing an offshore transmission solution will have a critical impact on the costs associated with achieving New Jersey’s objective of promoting the development of 7,500 MW of offshore wind energy by 2035. While a well-designed framework can reduce the cost and environmental impact of meeting New Jersey’s offshore wind goals, other countries' experience with backbone transmission highlights the potential risks of such an approach. For instance, Germany’s early experience with the development of offshore transmission solutions—which was characterized by multi-year delays and cost overruns that imposed billions of dollars in additional costs on ratepayers—serves as a powerful cautionary tale that should be heeded as New Jersey moves forward with these efforts.¹ For these reasons, it is essential to ensure that any framework implemented by the NJ BPU is tailored to meet all stakeholders' needs without hindering NJ’s ability to meet its ambitious offshore wind goals on time.

Equinor believes that the development of a networked backbone transmission solution capable of achieving the benefits sought by the NJ BPU will require establishing a regulatory and commercial framework that provides New Jersey, New Jersey ratepayers, and offshore wind developers certainty regarding the costs and timing associated with interconnection as well as project operation. One of the primary advantages of the current reliance on dedicated gen-lead lines is the certainty and control it provides generation developers over the development, operation, and maintenance of the facilities used

¹ See, e.g., DIW Econ, Market Design For An Efficient Transmission Of Offshore Wind Energy (May 2019), available here: https://diw-econ.de/wp-content/uploads/DIW-Econ_2019_Market-design-for-an-efficient-transmission-of-offshore-wind-energy.pdf.



to interconnect their projects. Under the existing approach, offshore wind developers are able to seamlessly integrate the installation of their interconnection lines with the development timeline of the project as a whole. Following the commencement of commercial operation, a developer has an incentive to ensure that its interconnection facilities are maintained in a manner that maximizes the availability of the project, including scheduling maintenance and outages in a manner that is compatible with the efficient and cost-effective operation of the generation resource.

Equinor believes that the viability of an offshore wind backbone transmission model will depend on establishing a framework that provides generation developers with a comparable level of certainty, including mitigating the exposure of developers to delays, outages, and de-rates that are beyond their control. Ultimately, ensuring that there are adequate safeguards to eliminate these risks will be critical to the ability of generation resources to fulfill their obligation to the BPU to operate their projects in a manner that maximizes the value of the project for New Jersey.

In the following sections, Equinor highlights some of the key risks that the BPU should take into account as it continues to pursue the potential development of backbone solutions, along with some proposed mitigation options to provide the necessary protections and align transmission and generation developers' incentives.

I. Pre-Commercial Operation Risk

A. Transmission Facility Delays

Achieving a workable framework for the development of backbone transmission solutions to meet New Jersey's offshore wind goals will require designing a framework that ensures that the transmission developer has a strong incentive to bring its facility online as scheduled and protects developers against the commercial risks associated with project delay. Material delays in the transmission facility's construction create a risk that the offshore wind facility will be forced to sit idle until the transmission facility is complete and placed into service, with adverse consequences for both the developer and New Jersey:

- From the developer's perspective, such delays could have the effect of eroding the value of the OREC commitment absent a mechanism to adjust prices and the length of the commitment term to account for the time lost.
- From the state's perspective, significant delays could prevent offshore wind resources from coming online on a schedule that aligns with New Jersey's offshore wind goals.

Regardless of if delays actually materialize, the mere fact that an offshore wind facility relies on an offshore backbone transmission facility could increase financing costs. For example, project financing partners may demand a cost premium to account for the uncertainty associated with such an arrangement. Although initially borne by the project developer, these additional costs are ultimately borne by the ratepayer.



In order to mitigate these risks, Equinor recommends that the Commission consider the following measures to ensure that the transmission developer has a strong incentive to bring the project online on schedule and to protect the developer from the adverse consequences of delay.

As an initial matter, the transmission developer should be required to pay liquidated damages (“LD”) for each day of delay past the commercial operation date guaranteed by the developer. These LDs should be paid directly to generation developers that are affected by the delay to ensure that they can meet their financial obligations and offset any additional costs experienced due to the delay in achieving commercial operation. When structured in this way, LDs could also mitigate some of the risks associated with the project finance cost premiums, thereby protecting developers and decreasing overall cost to ratepayers. The concept of delay damages is regularly employed in transmission service agreements, power purchase agreements, and other agreements to encourage the timely development of a project.²

Equinor also believes that it would be appropriate to provide a transmission developer that brings a facility online in advance of, or by, the target commercial operation date with a bonus or other financial incentive to reward efficient project development. One option, for instance, would be to provide the transmission developer with an increase in the return on equity that would apply if the facility is placed in-service before the expected completion date set by the BPU.

In addition, the OREC framework should also be modified to protect the value of the developer’s OREC commitment. In order to ensure that the offshore wind developer does not see the value of its OREC commitment decrease due to delays in the construction of the transmission facility, the BPU could, for instance, allow the offshore wind developer to adjust its OREC price and commitment term to account for any delays in the construction of the interconnection facility.

B. Risk of Abandonment

Similar to the risk associated with transmission facility delays, the abandonment of construction due to the transmission developer's bankruptcy or other factors could be devastating for both developers and New Jersey ratepayers. In practice, an entity's decision to abandon further development of the transmission line is likely to force offshore wind developers to choose between accepting multi-year delays associated with the implementation of alternative transmission solutions—likely at significant additional cost—or abandoning further development of their generation facilities. In either case, the transmission facility's abandonment is likely to imperil New Jersey's ability to timely and cost-effectively meet its offshore wind objectives.

To compensate for the significant damage that project abandonment would impose on offshore wind developers and the state, any entity that is selected to pursue the development of the offshore transmission solution should be required to pay a termination payment if it abandons construction of the

² See, e.g., *Central Maine Power Co.*, Bilateral, Cost-Based Transmission Service Agreements, Docket No. ER18-2259-000, Attachment 1, Section 4.4.1 (filed Aug. 20, 2018) (requiring developer of transmission line being constructed to facilitate delivery of clean energy resources selected through state solicitation to pay generation resource delay damages of \$50 per MW of contract capacity per day for delays past target in-service date).

project. This termination payment should be set at a level that is sufficiently high to ensure that the transmission developer has an incentive to complete the project, except when further development of the project is impossible due to factors beyond its control, and compensate developers for their damages. To protect against potential insolvency, the termination payment should be supported by security posted by the developer upfront that could be drawn upon in the event the project is abandoned due to bankruptcy.

II. Post-Commercial Operation Risks

A. Outage Scheduling

In developing an offshore wind transmission framework, it is important to recognize that the owner of the generation resource and the transmission facility may have different incentives regarding the timing of outages. The owner of the generation facility has an incentive to operate and maintain the facility in a manner that minimizes outages during peak production periods when the generation facility can provide the most value to the market and, ultimately, New Jersey ratepayers. On the other hand, the transmission facility owner is incentivized to schedule an outage in a manner that minimizes its overall cost. Due to this mismatch of incentives, an outage scheduled by a transmission owner may coincide with a high-value period of generation, thereby depriving the developer and New Jersey ratepayers of significant value.

Furthermore, the existing PJM outage scheduling rules do not adequately mitigate these risks. Although transmission owners are required to obtain PJM approval to conduct a planned outage, there currently is no mechanism that would allow generation owners to play a role in determining the timing of an outage. While PJM evaluates a request to schedule an outage to determine whether it violates applicable reliability criteria or market rules, its evaluation does not consider the financial and operational impact on individual generators. Some onshore generators can mitigate this risk by utilizing other transmission facilities. Given their remote nature and the limited capacity of a given onshore interconnection point, offshore generators would not have the same alternatives available.

Addressing this issue would require establishing clear, up-front limitations on the periods during which the owner of a backbone transmission facility could schedule planned outages. This could involve, for instance, identifying specific months during which the owner of the transmission facility would be prohibited from scheduling an outage. These limitations should be established through a collaborative process involving PJM, generation developers, and the transmission owner. Establishing defined periods during which outages would not be permitted would have several advantages:

- Provide developers with certainty regarding facility availability;
- Allow developers to schedule planned generator maintenance during periods when the transmission facility is likely to be unavailable; and
- Minimize the potential for disputes between the interconnecting generation resources and transmission owners.



These measures should be complemented by rules that ensure that the transmission facility owner is required to coordinate the timing of planned outages with generation owners in advance. This will help avoid schedule mismatches between the planned outage schedules of individual generation owners and the transmission facility.

Equinor acknowledges that unplanned outages may occur and may be needed on short notice. In such instances, the transmission owner should also have an obligation to consult with interconnecting generation owners and accommodate requests to modify outage schedules to the extent that doing so is consistent with good utility practice or another objective standard.

B. Transmission Facility Availability

Long-periods during which the transmission facility is out-of-service or de-rated could significantly reduce the revenues captured by individual generators, expose the generator to penalties, and, in some cases, may increase the risk of forced outages or equipment failures at the offshore wind facility. For this reason, offshore wind developers generally operate and maintain their interconnection facilities in a manner designed to ensure that the facilities are available in the vast majority of hours.

To de-risk the use of a backbone transmission facility for offshore wind developers, it will be important that the transmission owner has an incentive to operate and maintain its facility to achieve this same level of performance and availability. Currently, a transmission owner is guaranteed to recover its costs, plus a reasonable rate of return, regardless of the availability of the facility. Therefore, a transmission owner currently would be insulated from the financial exposure associated with sub-par availability and performance.

Similar to the possible mitigation discussed above, one way to address this risk would be to require the transmission owner to pay LDs to the generation owners if the transmission owner fails to achieve a particular level of annual system availability. Requiring a transmission owner to pay LDs creates a powerful incentive to operate the facility in a manner that maximizes the availability and use of the facility. Because the failure to achieve the target level of performance would adversely affect the generation resources interconnected to the line, these LDs should be paid to the generation resources interconnecting to the line. In the case of generation developers that have agreed to sell ORECs to meet New Jersey's needs, these damages would then be passed through to New Jersey ratepayers, thereby reducing the net impact on ratepayers. To achieve the appropriate financial incentives, the costs of LDs should not be passed through in the transmission owner's rates. Instead, the costs of any LDs should be borne by the transmission owner's shareholders.

Respectfully Submitted,

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