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April 29, 2022

Aida Camacho-Welch
Board Secretary
Board of Public Utilities 44
South Clinton Ave.
3rd Floor, Suite 314
Trenton, NJ 08625-0350

Re: **Docket No. QO20100630 - In the Matter of Declaring Transmission to Support Offshore Wind a Public Policy of the State of New Jersey**

On March 4, 2022, the New Jersey Board of Public Utilities ("BPU") requested "additional information to inform the Board's evaluation of offshore wind transmission proposals submitted to PJM Interconnection, LLC ("PJM") pursuant to the PJM State Agreement Approach ("SAA"). NextEra Energy Transmission MidAtlantic Holdings, LLC ("NEETMA") appreciates the opportunity to provide these comments in response to BPU's request. NEETMA strongly supports Governor Murphy's bold plan to transition New Jersey to 100 percent clean energy by 2050 to provide a safer, cleaner planet. NEETMA's New Jersey Seawind Connector ("NJSC") proposals submitted in the SAA process can be completed within the Governor's ambitious timeline while providing the capability to transmit the most power at the lowest cost to customers. As the world's largest generator of energy from the wind and the sun, NextEra Energy and its affiliates, have unparalleled experience in assisting States to achieve their renewable energy goals by designing and siting renewable energy infrastructure at an affordable cost while minimizing impacts to both the community and the environment. And as an affiliate of the owner and operator of the country's largest electric utility with 5.6 million customer accounts, NEETMA understands the importance of critical infrastructure and reliable service for customers. The SAA is one of the largest and most complex solicitations in New Jersey's history. It is imperative that the state consider partners with the financial, operational and technical expertise necessary to successfully execute these projects.

1. **Project Deliverability** – NextEra Energy, NEETMA's parent company, has extensive experience constructing transmission infrastructure projects. Since 2003, NextEra Energy, through its affiliates, has successfully constructed approximately $67 billion in large infrastructure projects across 37 different states in the country. With respect to the NJSC proposals, NEETMA has completed detailed engineering surveys to confirm route feasibility and substantiate the estimates provided. [redacted] Moreover, NEETMA is the only developer under consideration in the SAA that currently operates the same HVDC technology in the United States that is being proposed in the SAA process. NEETMA and its affiliates have a strong record of reliability. For example, NEETMA's affiliate, Florida Power & Light Company, has been awarded the national award for reliability six out of the last seven years by ReliabilityOne.

2. **Affordability and Cost Containment** – NEETMA offered the most cost-effective proposal from both a capital cost and annual revenue requirement perspective. [redacted]. Given the current environment of inflation and economic unpredictability, the protections proposed by NEETMA provide certainty to New Jersey. Moreover, NEETMA's proposed design considers the cost to generators to connect to the SAA project, thereby providing the most comprehensive and cost-effective option to deliver offshore wind to customers.

3. **Environment and Community Needs** – NEETMA's NJSC proposals are also designed to minimize potential environmental and community impacts. This was accomplished by maximizing the amount of offshore wind that could be delivered utilizing the same transmission corridor onshore while employing an HVDC design, minimizing shore landings and minimizing the amount of trenching both onshore and offshore. Moreover, NEETMA has had productive discussions with the potential host communities, many whom have provided letters of support for the project as shown in Table 0-1.

Table 0-1 Community Support for New Jersey Seawind Connector

Proposal	Deans	Oceanview	Cardiff
Towns Providing Letters of Support	Borough of South River Township of South Brunswick Middlesex County	City of Asbury Park Neptune Township	Pleasantville

4. **Flexibility, Modularity and Option Value** - NEETMA is the only developer that has provided strategic options to deliver offshore wind energy to meet or exceed the 7,500 MW goal, while including construction modularity and redundancy. The NJSC proposals can be constructed to accommodate multiple transmission circuits, allowing future installations with minimal construction disruption. NEETMA also provided options to add redundancy in the ocean to maximize the delivery of wind through the platform connectors and the option to relocate platforms. In addition, the NJSC proposals can utilize fixed or flexible platform locations depending on whether BPU wants to optimize cable and platform impacts versus schedule.

The NJSC proposals were developed after a comprehensive analysis of 19 injection locations that included evaluation of routes, landings, technical designs, interconnection points, onshore upgrades, marine and environmental impacts, community impacts, and cost considerations. By ensuring that BPU's objectives are achieved, the NJSC proposals were designed to address all criteria that is important to New Jersey, ensuring that the best design was developed to deliver offshore wind.

In the following comments, NEETMA provides an in-depth analysis of how each developers' capabilities and proposals address the four criteria. This analysis includes identifying the pros and cons of proposal and whether they achieve the BPU's stated objectives. As demonstrated below, NEETMA has the best combination of experience and project design. Conversely, certain developers have some experience but design considerations for their proposals are flawed. And other proposals may have technically sound designs, but the developer has little to no experience in development and operations of large infrastructure or transmission facilities.

The following analysis will demonstrate NEETMA is among the most experienced developers with a superior design, offers strong cost containment provisions, minimized overall cost and community and marine impacts, and provided significant optionality, expandability and flexibility. NEETMA and the NJSC proposal offers the best value proposition for New Jersey to achieve its offshore wind energy goals.

[redacted]

[redacted]

[redacted]

[redacted]

2. ***"Affordability and Cost Containment" evaluates the overall costs of the project including offshore wind generator costs, strength of cost containment provided, and the financial strength of the developer which is important to determine the risk of a developer walking away from the project.***

[redacted]

[redacted]

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1 See NJBPU SAA Stakeholder Meeting #4 Presentation (April 12, 2022) at slide 48. Regarding the projects identified in LS Power's presentation, costs were derived from publicly available information via the Public Utility Commission of Texas ("PUCT") website (PUCT Docket Nos. 38435, 37956, and 38650), SilverRun Electric Formula Rate Template 2022 posted on PJM's website, and the California Independent System Operator Selection Report.

2 According to their website, Blackstone is an investment business, Rise Power is only a generation developer, and Anbaric has not constructed or operated any transmission projects.

3 EDF/Shell, Anbaric, Blackstone and Rise Power are not current TOs in the U.S. and have had little to no experience operating transmission facilities.

[redacted]

[redacted]

As outlined in NEETMA's presentation on April 12th, Meeting #4 on Cost Containment, construction cost is only one aspect of costs to ratepayers[5] . Therefore, it is important that cost commitments and sensitivities around exclusions are evaluated appropriately. For example, if a developer has offered no commitment on Return on Equity ("ROE") or capital structure, the developer may seek a higher cost of capital from the Federal Energy Regulatory Commission ("FERC") than what PJM/BPU may have evaluated in the SAA process. Under this scenario, projects costs could be significantly higher than anticipated. The table below outlines sensitivities on cost components and how much customer costs, represented as the present value of revenue requirements over 40 years, would increase if key components are not protected by containment.

4 As evidenced in the PSE&G 10-K filings on its investment in the Ocean Wind project, "future capital expenditures may be greater than expected as a result of, among other things, potential timing delays, cost overruns, labor disputes or unanticipated liabilities in connection with the project"

5 See NJBPU SAA Stakeholder Meeting #4 Presentation (April 12, 2022) at slide 40.

Table 2-2 Cost Containment Sensitivities

Cost Sensitivity[6]	Cost to Customers (40 Year Present Value Revenue Requirement)[7]
Capital Cost +20%	+19%
ROE +200 bps	+9%
Debt Cost +200 bps	+8%
Equity +10%	+7%
Total	**+43%**

Capital cost is the most important and percent increases in capital cost are almost a 1:1 increase in customers' costs. The sensitivities of +200 bps on ROE, +200 bps on debt costs and +10% on equity are realistic scenarios that could occur, especially in the current inflationary market. As a frame of reference, for a $4 billion dollar construction project, every 10% increase in the cost to customers results in approximately $500 million[8] in additional cost of the project over the life. For the parameters listed above, a 43% increase would result in more than $2 billion in additional cost over the life of the project.

[redacted]

6 Base assumption for sensitivities: 45% equity, 9.8% ROE, and 4% debt costs, 40 years of depreciation, and assumed O&M for a representative project.

7 Present Value Revenue Requirement represents the value of the revenue requirement @ 5% discount rate.

8 Id

3. ***Environmental and Community Needs: quantifies project impacts as it relates to miles of underground or overhead transmission lines installed, number of unique shore landings proposed, number of offshore platforms required and miles of unique cable trenching required of each SAA project, including what is needed for offshore wind developers to connect to the SAA project.***

[redacted]

[redacted]

[9] Clean Energy Gateway – Solutions A, B, and B-Alt identify the need for 6 500 kV circuits or a total of 18 cables to be deliver power from their shore substation inland.

[redacted]

[redacted]

[redacted]

In addition, NJSC's HVDC design minimizes the number of platforms that are necessary to collect offshore wind projects. For example, Ocean Wind 1 is an AC design, and requires 3 platforms to deliver 1,100 MW of power[11]. Another example is the Atlantic Shores Offshore Wind project, which proposes up to five AC platforms to accommodate 1,510 MW[12]. Not only are these offshore platforms adding significant cost, but they result in further permanent above-sea infrastructure and additional marine impacts that can be avoided with more optimal designs. In contrast, NJSC's proposed design will allow OSW developers to connect directly to the offshore platform at the 66 kV AC side, lowering cost and avoiding the need for multiple additional platforms.

[redacted]

11 See Ocean Wind 1's Construction and Operations Plan (March 2021) at p. 59.

12 See Atlantic Shores Offshore Wind's Construction and Operations Plan (September 2021) at p. E-5.

[redacted]

[redacted]

NEETMA's NJSC proposals provide the BPU the ability to move forward with a radial transmission design today but preserves the option to network offshore platforms together at any point in time to provide redundancy. This is accomplished by providing a readily available 230 kV AC termination that would allow 230 kV cables to be installed from platform-to-platform. In contrast, Anbaric and Mid-Atlantic Offshore Development's proposals propose to utilize a DC-to-DC connection. Not only is the proposed design not commercially viable today for the proposed voltage and MW levels, but it also provides inferior redundancy. The benefits of an AC-to-AC design over a DC-to-DC platform connection are outlined in Table 4-2 below:

Table 4-2 AC vs DC Connections for HVDC Platforms

Item	AC-to-AC Platform Connections	DC-to-DC Platform Connections (proposed by Anbaric and Mid-Atlantic Offshore Development)
Viable Proven Technology Today	Yes	No – DC breakers are expected to be commercially available after 2030[14]
Can accommodate different converter OEMs	Yes	No – Not Currently
Can be located on same platform as converter	Yes	Not likely – DC circuit breakers are significantly larger

[14] PROMOTioN – Progress on Meshed HVDC Offshore Transmission Networks, *Final Deployment Plan*, September 14, 2020, p. xxxvii.

Item	AC-to-AC Platform Connections	DC-to-DC Platform Connections (proposed by Anbaric and Mid-Atlantic Offshore Development)
Redundancy for fault at offshore converter station	Yes	No
Redundancy for fault at onshore converter station	Yes	Yes
Redundancy for fault on DC cable	Yes	Yes

[redacted]

15 See NEETMA Proposal Attachment 1 – BPU Supplemental Info, Sections 3.1, 3.2, and 4.2.

[redacted]

. For example, if BPU selects the NEETMA's NJSC Oceanview 3,000 MW proposal, the first 1,500 MW HVDC system could be installed, however, the second 1,500 MW HVDC system could be installed later. With the duct bank already installed and designed to accommodate additional circuits, subsequent cable additions could be installed more efficiently and require significantly less disruption to the communities.

[17] NEETMA Supplemental Information Filing (March 28, 2022) at 16.

Conclusion

In the appendices, NEETMA provided further comparisons based on similar injection locations. This provides additional detail on the strengths and weaknesses of each proposal, and what becomes evident, is that NJSC is the only proposal that checks all the boxes:

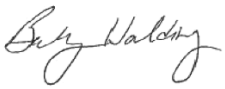
- As evidenced in Table A-1 of the Appendix that compares Deans and Sewaren proposals, the NJSC Deans proposal provides the most power, greatest expandability, and fewest landings. While Atlantic Power Transmission provides a similar design, their lack of experience developing, constructing and operating projects should be a concern.

- As evidenced in Tables A-2 and A-3 of the Appendix that compares Oceanview and Larrabee proposals, the NJSC Oceanview proposal has significantly fewer community impacts, fewer marine impacts, and is significantly more cost effective.

- As evidenced in Table A-4 of the Appendix that compares alternatives to Atlantic Shores Offshore Wind and Ocean Wind 2 constructing separate transmission lines to the grid, the NJSC Cardiff proposal provides a coordinated approach that significantly reduces marine impacts, community impacts, and shore landings. Additionally, NJSC Cardiff will save ratepayers an estimated $1.6 B in construction costs.

NEETMA worked diligently and creatively to provide the most innovative transmission proposals that addresses BPU's objectives of Project Deliverability, Flexibility and Optionality, Minimizing Community and Environmental Impacts, and Affordability. NEETMA's NJSC proposals achieve all of BPU's objective by looking at the problem holistically and comprehensively, resulting in the best solution and partner for New Jersey to achieve its offshore wind energy goals.

Respectfully yours,



Becky Walding
Assistant Vice President
NextEra Energy Transmission MidAtlantic Holdings, LLC

JohnBinh Vu
Executive Director, Transmission Development
NextEra Energy Transmission

APPENDICES

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