



Agenda Date: 11/18/2020
Agenda Item: 8D

STATE OF NEW JERSEY
Board of Public Utilities
44 South Clinton Avenue, 9th Floor
Post Office Box 350
Trenton, New Jersey 08625-0350
www.nj.gov/bpu/

CLEAN ENERGY

IN THE MATTER OF OFFSHORE WIND)
TRANSMISSION)

ORDER

)
)
)
) DOCKET NO. QO20100630

Party of Record:

Stefanie A. Brand, Esq., Director, New Jersey Division of Rate Counsel

BY THE BOARD:

The public policy of the State of New Jersey, as set out by the legislature and Governor Murphy's 2019 Energy Master Plan ("EMP"), is to expand the transmission system to accommodate the buildout of 7,500 megawatts ("MW") of offshore wind by 2035. In furtherance of this public policy, the New Jersey Board of Public Utilities ("Board") formally requests that PJM Interconnection, LLC ("PJM") incorporate the State's offshore wind goals into the PJM transmission planning process, via the "State Agreement Approach" ("SAA") set forth in the PJM Operating Agreement.

This formal request on behalf of New Jersey consumers represents the first time that a PJM State has requested that PJM incorporate state public policies into its planning process. The Board takes this action to confirm the State's commitment to the development of offshore wind generation, in a manner that may lead to more efficient and cost-effective incorporation of offshore wind generation into New Jersey's transmission grid and avoid transmission-related delays.

BACKGROUND

The Board has long recognized that limits on the existing transmission system and the challenges associated with expanding or replacing transmission facilities, represent a major source of cost uncertainty and potential risk of delays in meeting the State's offshore wind goals. The State's ambitious offshore wind goals were set forth in Governor Murphy's Executive Order No. 8, which directed the Board to take "all necessary actions . . . to promote and realize the development of wind energy off the coast of New Jersey to meet a goal of 3,500 megawatts of offshore wind energy generation by the year 2030." In 2019, Governor Murphy signed Executive Order 92, which increased the State's offshore wind goal to 7,500 MW by 2035.

In 2019, the New Jersey Legislature enshrined the concept of an “open access offshore wind transmission facility” into state law as meaning “an open access transmission facility, located either in the Atlantic Ocean or onshore, used to facilitate the collection of offshore wind energy or its delivery to the electric transmission system in this State.” N.J.S.A. 48:3-51.

The EMP explains how “planned transmission to accommodate the state’s offshore wind goals provides the opportunity to decrease ratepayer costs and optimize the delivery of offshore wind generation into the state’s transmission system.” EMP, Goal 2.2.1 at 117. The EMP further states that “[c]oordinating transmission from multiple projects may lead to considerable ratepayer savings, better environmental outcomes, better grid stability, and may significantly reduce permitting risk.” Id. The EMP directs that the Board “should endeavor to collaborate with PJM to ensure that transmission planning and interconnection rules accommodate [offshore wind] resources.” Id. Also included in the EMP is recognition that transmission must be planned and the Board must exercise its regulatory authority to “actively engage in transmission planning.” Id., Goal 5.2.1 at 182. The same week that Governor Murphy issued the EMP, he also signed legislation authorizing the Board to conduct one or more competitive solicitations for open access offshore wind transmission facilities. L. 2019, c. 440 (Jan. 21, 2020); N.J.S.A. 48:3-87.1(e).

On November 12, 2019, Staff of the Board of Public Utilities (“Staff”) held an offshore wind transmission Technical Conference (“Technical Conference”) to solicit input from stakeholders on transmission considerations and solutions. The Technical Conference included four panels of stakeholders to explore the following issues/questions:

- How other jurisdictions connected geographically remote generation through shared transmission facilities;
- Possible frameworks for building open access offshore wind transmission facilities;
- Technical considerations for offshore transmission facilities; and
- Cost responsibility, risk, and business model considerations associated with open access offshore wind transmission solutions.

Several stakeholders at the Technical Conference noted that a planned transmission solution could potentially minimize the environmental footprint of bringing power ashore, particularly by coordinating the number of times transmission facilities would need to cross environmentally-sensitive beach and ocean habitats. Stakeholders also noted the benefits of coordinated transmission upgrades in facilitating the delivery of the power into the PJM system. However, others highlighted the potential risks associated with requiring offshore wind generation resources to depend on third-parties to construct open access transmission facilities and, in particular, the commercial risks to offshore wind generation developers. The Board has continued to examine these and other issues through detailed consultation with its experts, sister agencies and other stakeholders.

Building on the recommendations of the EMP and the factual record developed during the Technical Conference, the Board's Offshore Wind Strategic Plan ("Strategic Plan") asserts that "[i]nvestments in planning and infrastructure are necessary to build the transmission infrastructure and regional markets needed for offshore wind energy to support a clean energy future." Strategic Plan at 77 (Sept. 9, 2020). Specifically, the Strategic Plan recommends that meeting New Jersey's 7,500 MW goal of offshore wind energy requires "[c]ollaborat[ing] with PJM, as set forth in the New Jersey Energy Master Plan, to assure transmission infrastructure accommodates renewable energy such as offshore wind." Id. at 78. The Strategic Plan also recommends "[w]ork[ing] with PJM and local utilities to develop a grid transmission study to integrate 7,500 MW of offshore wind energy by 2035." Id.

BACKGROUND ON PJM'S SAA

In its landmark Order No. 1000, the Federal Energy Regulatory Commission ("FERC") directed each of its jurisdictional regional grid operators to "describe procedures that provide for the consideration of transmission needs driven by Public Policy Requirements in the regional transmission planning processes." Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Order No. 1000, 136 FERC ¶ 61,051 at P 203 (2011), order on reh'g, Order No. 1000-A, 139 FERC ¶ 61,132, order on reh'g, Order No. 1000-B, 141 FERC ¶ 61,044 (2012), aff'd sub nom. S. C. Pub. Serv. Auth. v. FERC, 762 F.3d 41 (D.C. Cir. 2014) ("Order No. 1000"). In PJM, the transmission planning process is known as the Regional Transmission Expansion Plan, or RTEP. The RTEP planning process runs in multiple "windows" each year, and can result in the construction of new transmission facilities that improve economic efficiency, meet reliability needs, or, upon request by a state, to meet state-mandated public policy requirements.¹

PJM implemented the requirements of Order No. 1000 by incorporating the SAA into its Operating Agreement:

State governmental entities authorized by their respective states, individually or jointly, may agree voluntarily to be responsible for the allocation of all costs of a proposed transmission expansion or enhancement that addresses state Public Policy Requirements identified or accepted by the state(s) in the PJM Region. As determined by the authorized state governmental entities, such transmission enhancements or expansions may be included in the recommended plan ... as a . . . state public policy project, which is a transmission enhancement or expansion, the costs of which will be recovered pursuant to a FERC-accepted cost allocation proposed by agreement of one or more states and voluntarily agreed to by those state(s).

PJM Operating Agreement, Section 1.5.9(a) of Schedule 6.

¹ Additional background on the RTEP process is available from PJM.
<https://www.pjm.com/~media/about-pjm/newsroom/fact-sheets/rtep-fact-sheet.ashx#:~:text=PJM%20planners%20continuously%20analyze%20the,help%20ensure%20the%20system%20meets>

In proposing the SAA, PJM explained that the SAA “provides a vehicle for states to propose: (i) a state public policy project to PJM for inclusion in the RTEP, the costs of which shall be recovered from the customers in the states proposing the project.” Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Compliance Filing of PJM Interconnection, LLC, Docket No. ER13-198, 38-39 (Oct. 25, 2012).

While these provisions have existed in the PJM Operating Agreement for over seven years, no state within the PJM footprint has thus far elected to pursue an SAA project. Under the SAA process, a state and PJM initially work to identify a specific public policy “need” (or multiple specific “needs”) that the state is seeking to facilitate through improvements to the transmission system. Once the state and PJM have identified the need, the state has the option to formally request that PJM solicit transmission solutions to meet the identified need in its normal RTEP process.

Here, this solicitation would include transmission developers proposing projects, to be completed over the next 15 years, as specified in Governor Murphy’s proposed offshore wind solicitation schedule.² This build-out will meet New Jersey’s goal of facilitating the delivery of a total of 7,500 MW of offshore wind to consumers (including the 1,100 MW of offshore wind awarded in the Board’s first solicitation, as well as any awards made in the second solicitation) and facilitating the efficient delivery of the power to New Jersey consumers over the expected life of the offshore wind projects. Meeting the State’s public policy of 7,500 MW could potentially be accomplished through one or multiple transmission solicitations. Staff intends to work with PJM to include the State’s public policy requirements during an RTEP window in 2021. Once the window is open, transmission developers may submit competing transmission proposals to PJM, which will detail route lines, cost, delivery dates, proposals to phase construction and other project details.

Once proposals from transmission developers are received and evaluated through the PJM planning process, the State of New Jersey, through the Board, then has the option to select one or more of the proposed projects. If the State does not find that any of the proposed SAA projects provide a compelling value to consumers, then it may elect to close the process without constructing any transmission facilities. However, if the State does select one or more SAA project(s), then ratepayers would be assigned the costs of the transmission upgrades selected pursuant to a FERC-accepted cost allocation that is agreed to by the Board. The RTEP rules also expressly allow transmission developers to include legally binding cost-caps, which PJM and Board Staff will evaluate in recommending efficient or cost-effective solutions to the Board for further consideration. PJM Operating Agreement, Section 1.5.9(e) of Schedule 6. Depending on their structure, binding cost-caps may reduce ratepayer and project-on-project risk concerns.

STAFF RECOMMENDATION

For the last six months, Staff has engaged in collaborative scoping discussions with PJM to determine the optimal pathway to achieve Governor Murphy’s 7,500 MW offshore wind goal. After working with PJM and Staff’s consultant, Levitan and Associates, Inc., Staff recommends that the State initiate a competitive solicitation process to examine whether an integrated suite of open access offshore wind transmission facilities, both on-shore and potentially off-shore, could best facilitate meeting the State’s offshore wind goals in an economically efficient and timely manner.

² Available here: <https://www.nj.gov/governor/news/news/562020/20200228a.shtml>

As noted above, the competitive solicitation process would be run by PJM, on the Board's behalf, as part of PJM's integrated RTEP process. The Board's rights and obligations will be spelled out in future filings and enforced through the SAA. Staff and its consultant believe that such a coordinated and planned approach could:

- Result in more efficient or cost effective transmission solutions versus a non-coordinated transmission planning process;
- Significantly reduce the risks of permitting and construction delays resulting from a non-coordinated approach; and
- Minimize environmental impacts associated with on-shore and potentially offshore upgrades.

Staff also notes that this announcement would be the first in PJM's history and confirms the State's leadership position in the efficient and cutting-edge development of transmission solutions for offshore wind ("OSW").

In making this recommendation, Staff notes that there are several safeguards in place to protect consumers. *First*, Staff notes that the authorization it recommends today does not include authorization from the Board for PJM to move forward with selecting a potential project identified in the RTEP process. Instead, it authorizes PJM to incorporate New Jersey's needs into its transmission planning process and solicit ideas from transmission developers on how best to meet the State's needs. Once projects are proposed, the SAA allows the Board to evaluate the proposals in concert with PJM. Only after full consideration of the proposals will the Board be asked to commit New Jersey consumers to funding any selected projects. Alternatively, the Board may elect to terminate the process. There are no financial obligations associated with any step before the final decision to move forward with one or more of the proposed solutions coming out of the PJM RTEP process.

Second, Staff notes that PJM's RTEP rules contain extensive protections for consumers, including cost containment options and the ability to incorporate phased implementation of any transmission upgrades. These provisions allow the State and PJM to consider such items as the financial strength of any construction scheduling commitments and the developer's incorporation of voluntary cost caps into their RTEP bids. PJM considers voluntarily-submitted binding cost commitments when evaluating project proposals submitted in PJM's competitive proposal window process. See PJM Interconnection, LLC, 170 FERC ¶ 61,243, order on reh'g, 173 FERC ¶ 61,090 (2020) (accepting an amendment to PJM's Operating Agreement that would allow it to review and analyze voluntary cost commitments); PJM Operating Agreement, Sections 1.5.8(c)(2) and 1.5.8(e) of Schedule 6. PJM's consideration of such cost commitments is intended to help deliver benefits to consumers. Staff notes that such legally-binding commitments are likely to weigh heavily on whether an integrated transmission solution may be the more efficient or cost-effective means to reach New Jersey's offshore wind goals.

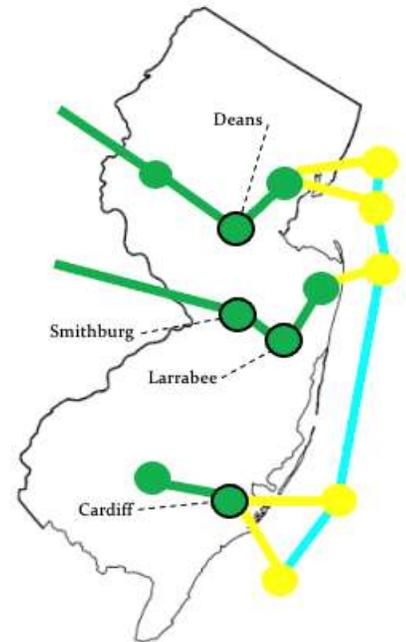
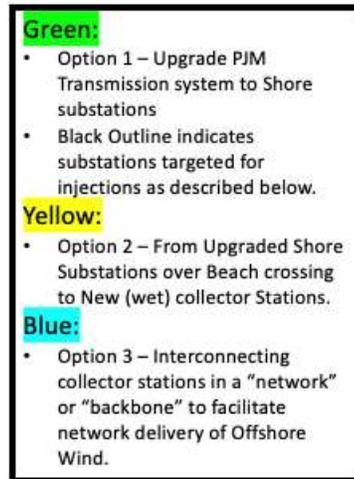
Third, Staff anticipates that the Board will have to address concerns regarding transfer of commercial risk between transmission and generation developers prior to approving a final coordinated transmission solution. Staff encourages entities bidding into the RTEP process to consider how their submitted cost-caps and other binding obligations may relate to interconnection of qualified offshore wind generation developers and Staff intends to facilitate further discussions on this topic. Innovative proposals to address the commercial risks associated

with delays in the construction of transmission facilities, on the one hand, or delays associated with construction of the offshore wind generators, on the other, should also be pursued.

Staff recommends that the Board direct PJM to seek potential transmission solutions for three inter-related components of an open access offshore wind transmission facility, as shown schematically in the chart below. Please note that the chart below is an illustration of potential options and is not intended to suggest specific outcomes or designs:

Option #1: PJM Grid to On-Shore Substations (Green):

- This option would upgrade the onshore PJM regional transmission system to accommodate the increased power flows from the offshore wind facilities.
- Under this option, offshore wind developers would continue to be responsible for getting the power from the lease areas to the newly constructed or existing on-shore substations.
- Solutions may include coordinated on-shore “power corridors” that would bring electricity to already-existing high-voltage transmission facilities.



Option #2: On-Shore Substations to Offshore Collector Platforms (Yellow):

- This option would involve soliciting bids from transmission developers to permit and construct the beach crossings and connect the (new or existing) on-shore substations to new (wet) offshore collector stations.
- If selected, it would be possible that this option could be selected in addition to Option #1, and offshore wind developers would be responsible for interconnection to the offshore collector platforms.

Option #3: Offshore Transmission “Backbone” (Blue):

- Connect different collector stations, serving various lease areas, in an effort to network the offshore wind lease areas.

- This option could result in network interties between offshore wind collector stations, potentially improving availability, and could also involve bids that include Options #1 or #2.

In order to most efficiently accommodate the flow of power from the 7,500 MW of planned offshore wind transmission, Staff recommends that the Board direct PJM to plan for injections of power into four substations on the PJM system between 2028 and 2035, as follows:

- 900 MW at the Cardiff 230 kV substation in Southern New Jersey;
- 1,200 MW of at the Larrabee 230 kV substation in Central New Jersey;
- 1,200 MW at the Smithburg 500 kV substation in Central New Jersey; and
- 3,100 MW at the Deans 500 kV substation in Northern New Jersey.

While Staff recommends that the Board identify these as the most likely locations on the PJM system that will need reinforcement to accommodate 7,500 MW of offshore wind, Staff also recommends that the Board invite developers to propose particularly cost-effective alternatives that may still meet the State's immediate policy goals, while deferring less cost-effective elements of the transmission expansion until a future transmission solicitation. Staff also recommends that the Board authorize the President to execute appropriate study agreements with PJM to memorialize these elections, consistent with this Order.

Staff notes that the exploration of coordinated transmission alternatives through the SAA does not impact the way the first OSW project, awarded to Orsted's Ocean Wind 1,100 MW project, interconnects to the transmission system. That project will interconnect as delineated in the applicable orders. The same is true for bidders in the Board's second offshore wind solicitation, who will interconnect to the transmission system per the solicitation documents. For the first award and the second offshore wind solicitation, the Board required the generation developers to include transmission and connection to PJM in its generation proposals, and to include the cost in the Offshore Wind Renewable Energy Certificate ("OREC") funding mechanism. Staff fully understands that imposing a requirement to utilize a coordinated transmission approach could delay or create additional risk for generation developers. Thus, while the second solicitation requires developers to address how their interconnection plans and design could support the State's future offshore wind development goals, including how a proposed project would work synergistically with any future offshore transmission grid and whether they would make their interconnection facilities available to future integrated offshore wind transmission solutions (referred to as "Future Proofing"), developers are not required to coordinate in a shared approach to transmission. Staff recommends that the Board clarify that there is no change to the approach for the second solicitation, and that incorporation of any offshore wind coordinated transmission solution as a result of the SAA process will be incorporated into future solicitations.

DISCUSSION AND FINDINGS

Consistent with the public policy set out by the legislature in N.J.S.A. 48:3-87.1(e), the directives of goal 2.1.1 of the EMP, and the record developed in New Jersey's Strategic Plan, the Board agrees with Staff's recommendation that it formally designate a coordinated open access offshore wind transmission solution as a public policy of the State of New Jersey. The Board **DIRECTS**

Staff to work with PJM through the SAA to initiate a first-of-its-kind public competitive solicitation process to examine whether an integrated suite of transmission upgrades, both on-shore and potentially off-shore, and through one or multiple solicitations, could result in a more efficient and cost-effective means of meeting the State's offshore wind goals and decreasing the chance of delays.

The Board's authority to work with PJM through the SAA process is clearly delineated in New Jersey law. In 2019 the Legislature specifically authorized the Board to "conduct one or more competitive solicitations for open access offshore wind transmission facilities" separate from the underlying offshore wind solicitation. N.J.S.A. 48:3-87.1(e). Additionally, the Office of the Attorney General has advised that the Board is a state governmental entity authorized by the State of New Jersey to enter into an SAA on behalf of New Jersey ratepayers. A Certificate of Authority memorializing this is included as Attachment A to this Order.

In light of the public policy set forth above, the Board **HEREBY REQUESTS** that PJM utilize the SAA included in PJM's Operating Agreement and authorizes PJM to include the three proposed options for an open access offshore transmission facility into a future RTEP solicitation window, as agreed to by PJM and Board Staff, and for the President to execute any appropriate transmission study agreement with PJM, consistent with terms of this Order.

The Board **FURTHER DECLARES** that, as part of facilitating an open access transmission facility, it approves the substation designations recommended by Staff as the points of injection that will facilitate a total of 7,500 MW of offshore wind in the most efficient manner for New Jersey ratepayers and **DIRECTS** that PJM utilize those facilities in its transmission planning process. These new transmission facilities should be operational between 2028 and 2035. However, the Board also invites developers to propose particularly cost-effective alternatives that may still meet the State's immediate policy goals, while deferring less cost-effective elements of the transmission expansion until a future transmission solicitation.

In so doing, the Board **HEREBY ORDERS** that any such project selected in that process would be a "state public policy project" and that all costs of any project or projects eventually selected would be recoverable from customers in the State according to FERC-accepted cost allocation that is agreed to by the Board; provided that any state or private entities wishing to partner with New Jersey in the future would be expected to bear a fair share of any development and operating costs.

The Board also **HEREBY DECLARES** that using the SAA is not intended to impact the first OSW award to Orsted's Ocean Wind 1,100 MW project, nor will the SAA process alter any guidance issued to bidders in the Board's second offshore wind solicitation. While the SAA will not affect the requirements for interconnection set out in the second solicitation, potential bidders are still expected to address the Future Proofing requirements of the second OSW solicitation.

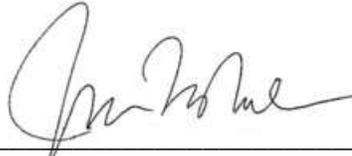
The Board **FURTHER ORDERS** that no assignment of costs is authorized until such time, if any, that the Board evaluates the outcome of the RTEP process and affirmatively agrees to bind the citizens of the State of New Jersey to paying for any transmission expansion pursuant to the SAA.

Finally, the Board is cognizant of the concerns raised by some stakeholders that a coordinated transmission solution may increase commercial risk on generation developers by making projects dependent on transmission facilities constructed by third-parties. While the Board continues to see the benefits of exploring a coordinated offshore wind transmission option more fully, the Board notes that it will weigh heavily proposals from transmission developers that utilize the voluntary

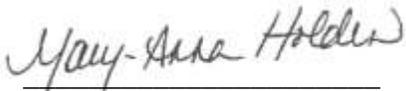
protections laid out in the SAA process to limit down-side risk to New Jersey consumers and to reduce project-on-project risk for generation developers. As a result, the Board **DIRECTS** Staff to address these concerns throughout the SAA RTEP window, by collaborating with PJM, transmission developers, and generation developers to maximize effectiveness of any contractual mechanisms that may be available to minimize the risk of project delays.

DATED: November 18, 2020

BOARD OF PUBLIC UTILITIES
BY:



JOSEPH L. FIORDALISO
PRESIDENT



MARY-ANNA HOLDEN
COMMISSIONER



DIANNE SOLOMON
COMMISSIONER

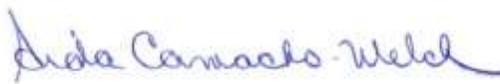


UPENDRA J. CHIVUKULA
COMMISSIONER



ROBERT M. GORDON
COMMISSIONER

ATTEST:

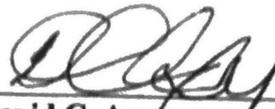


AIDA CAMACHO-WELCH
SECRETARY

ATTACHMENT A – CERTIFICATE OF AUTHORITY

I, David C. Apy, an Assistant Attorney General of New Jersey, do hereby certify that the New Jersey Board of Public Utilities ("Board") is a legally constituted public body with full authority and legal capability to enter into and perform the terms of a "State Agreement" between the Board and PJM Interconnection, L.L.C. ("PJM") in connection with incorporating New Jersey's offshore wind goals into PJM's transmission planning process, and that the attached Board Order was issued within the Board's statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 18th day of November, 2020.



David C. Apy
Assistant Attorney General
New Jersey Department of Law and Public Safety