

Agenda Date: 3/20/24 Agenda Item: 8D

STATE OF NEW JERSEY Board of Public Utilities 44 South Clinton Avenue, 1st Floor Trenton, New Jersey 08625-0350 www.nj.gov/bpu/

CLEAN ENERGY

IN THE MATTER OF DECLARING TRANSMISSION TO SUPPORT OFFSHORE WIND A PUBLIC POLICY OF THE STATE OF NEW JERSEY ORDER ON THE STATE AGREEMENT APPROACH (SAA) -PROJECT SCOPE MODIFICATIONS AND COST ADJUSTMENTS

DOCKET NO. QO20100630

Parties of Record:

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BY THE BOARD:

By this Order, the New Jersey Board of Public Utilities ("BPU" or "Board") considers scope changes and cost changes for State Agreement Approach ("SAA" or "SAA 1.0") projects originally approved on October 26, 2022 under this docket, which will result in a cost savings to ratepayers of approximately \$29 million.¹

¹ In re Declaring Transmission to Support Offshore Wind a Public Policy of the State of New Jersey, BPU Docket No. QO20100630, Order dated October 26, 2022 ("SAA Order" or "SAA 1.0 Award Order").

I. BACKGROUND AND PROCEDURAL HISTORY

As part of New Jersey's offshore wind ("OSW") coordinated transmission solution under the inaugural SAA, the Board awarded a series of projects to construct the on-shore transmission facilities necessary to deliver 7.5 gigawatts ("GW") of OSW generation to New Jersey customers.² The awarded SAA projects would help the State advance its clean energy targets and save ratepayers over \$900 million dollars when compares to an uncoordinated transmission approach.³ The SAA remains an important part of the State's OSW plans, which progressed on January 24, 2024, when the Board issued two (2) orders, collectively awarding a total of 3,742 MW of new OSW power off the coast of the State.⁴ The OSW projects awarded on January 24, 2024 will use the SAA projects to inject their energy into New Jersey's electricity grid.

In the SAA Order, the Board recognized that the development of transmission projects requires years of planning and coordination.⁵ Further, the Board found that "future revisions to the awarded projects herein under the Larrabee Tri-Collector Solution may be required depending on changed circumstances unknowable as of the time of award."⁶ With the appreciation that some flexibility is necessary, the Board retained the right to enter further orders to reflect "significant updates" to the scope, configuration, and/or costs to the awarded SAA projects on the basis of any future changed circumstances.⁷ The Board also authorized Board Staff ("Staff") to review and accept routine "changes to elements of any awarded projects that would increase the benefits to New Jersey ratepayers," and to notify PJM Interconnection, L.L.C. ("PJM") of same.⁸

As noted in the SAA Order, Staff relied on a robust record to support its SAA recommendation to the Board. Part of the record included Brattle's evaluation report ("Evaluation Report"), which provided an in-depth overview and analysis of the SAA evaluation.⁹

On June 29, 2023, the Board issued an order addressing the first round of cost adjustments for the SAA projects.¹⁰ By the June 2023 Order, the Board approved scope and cost changes resulting in a \$127.34 million cost increase for the SAA.¹¹ The Board found that despite the cost

³ <u>Id.</u> at 61.

⁶ <u>Id.</u> at 73.

⁷ Ibid.

⁸ Ibid.

¹¹ Id. at 7.

² <u>Id.</u> at 14. A GW is the equivalent of 1,000 megawatts ("MW"). The SAA Order's reference to 7,500 MW of OSW-generated power is the equivalent to 7.5 GW of OSW-generated power. <u>Id.</u>

⁴ In re Opening of New Jersey's Third Solicitation for Offshore Wind Renewable Energy Certificates (OREC), BPU Docket No. QO22080481, Order dated January 24, 2024 ("Attentive January 24, 2024 Order") (approving the Attentive Energy Two 1,342 MW project proposed by Attentive Energy LLC); In re the Opening of New Jersey's Third Solicitation for Offshore Wind Renewable Energy Certificates (OREC), BPU Docket No. QO22080481, Order dated January 24, 2024 ("Invenergy January 24, 2024 Order") (approving the Leading Light Wind 2,400 MW project proposed by Invenergy Wind Offshore LLC).

⁵ <u>See</u> SAA Order at 71.

⁹ The Brattle Group, <u>Brattle SAA Evaluation Report Final – Public</u>, October, 26, 2022, https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2109468.

¹⁰ In re Declaring Transmission to Support Offshore Wind a Public Policy of the State of New Jersey, BPU Docket No. QO20100630, Order dated June 29, 2023 ("June 2023 Order").

increases, the SAA project remained beneficial to New Jersey ratepayers and would continue to provide ratepayers a savings of approximately \$900 million as the state progresses to expand its offshore wind capabilities.¹²

II. DESCRIPTION OF CHANGES

Regarding project cost estimates, the Evaluation Report noted that the SAA bidders, including those that were awarded projects by the Board, provided uncertainty ranges for their SAA proposals' cost estimates.¹³ Brattle noted that most cost estimates provided by the bidders carried an uncertainty range of -20% to +30% of the submitted estimate.¹⁴ PJM also modeled, in its final financial analysis report, a scenario with an across-the-board 25% project cost increase, noting that the use of scenarios assist in providing insight into the impact of potential cost increases.¹⁵

New Jersey's awarded SAA projects are included in PJM's Regional Transmission Expansion Plan ("RTEP"), and SAA projects are required to follow the RTEP guidelines and process, including those established for cost estimate adjustments.¹⁶ The RTEP process does not require Board approval for scope-related cost estimate adjustments for approved RTEP projects.¹⁷ Rather, these adjustments will follow PJM's standard RTEP process and be subject to the same safeguards.¹⁸ However, one of the many benefits of the SAA is that it allows for greater transparency and Board involvement than would otherwise be provided under the standard RTEP process.

Since the SAA Order was issued, Staff and PJM regularly meet to discuss ongoing updates related to the awarded projects. As part of these meetings, PJM continues to provide updates to Staff when PJM receives cost estimate adjustments from the awarded SAA projects. PJM has indicated that these updates are not uncommon. In fact, PJM notes that it anticipates future cost estimate adjustments (both increases and decreases) across all the SAA projects, primarily as each project goes through its detailed engineering phase from which it will get more accurate

¹⁶ PJM Operating Agreement, Schedule 6; PJM Tariff, Schedule 12.

¹⁷ PJM Operating Agreement, Schedule 6, Section 1.6; PJM Tariff, Schedule 12.

¹² Id. at9.

¹³ Evaluation Report at 8.

¹⁴ Evaluation Report at 81.

¹⁵ <u>Financial Analysis Report: 2021 SAA Proposal Window to Support NJ OSW,</u> September 19, 2022, njosw-financial-analysis-report-september-final.ashx (pjm.com)

¹⁸ <u>See</u> PJM Operating Agreement, Schedule 6, which sets forth the rules and procedures for the RTEP. The Transmission Expansion Advisory Committee ("TEAC") is a committee established under the PJM Operating Agreement to aid in the development of the RTEP and provides advice and recommendations to the PJM Board of Managers ("PJM Board") for review of RTEP projects, including cost estimate adjustments. Cost estimate adjustments are routinely submitted to PJM by the project developer and then presented to the TEAC where TEAC members can review the cost estimate adjustments, ask questions and state their positions. TEAC members include transmission customers (as defined in the PJM Tariff), any other entity proposing to provide transmission facilities, agencies and offices of customer advocates who exercise regulatory authority over the rates, terms or conditions of electric service, and any other interested entities or persons. PJM Board retains discretion to formally review RTEP cost estimate adjustments. FERC can also review all costs included in transmission rates, including SAA-related costs, and change the resulting transmission rates if it finds that the inclusion of these costs renders those rates unjust and unreasonable. See 16 U.S.C. § 824e(a).

labor and material costs. Further, while typically the Board would not be specifically presented with these common cost estimate adjustments for RTEP projects, the SAA process allows for this additional engagement. Additionally, unlike with standard RTEP projects, Staff separately meets with SAA project developers to discuss the ongoing development of the projects. This close coordination and engagement provides a greater level of transparency than if the project had been awarded under the standard RTEP process. The coordination also ensures that the Board may exercise its retained right to review and approve "significant updates to the scope, configuration and/or cost," and Staff's ability to review and accept routine changes.¹⁹

The SAA updates can be categorized by their cost, scope, and allocation adjustments. The cost and scope adjustments for Public Service Electric and Gas Company's ("PSE&G's") Lake Nelson subproject – located near Piscataway, the Lake Nelson subproject is a component of the awarded SAA projects – are a result of the additional analysis after the SAA project was awarded. The engineering analysis conducted by PSE&G, as detailed to Staff by PJM staff and PSE&G, resulted in additional equipment to meet applicable reliability standards. For the scope and cost changes at Mid-Atlantic Offshore Development's ("MAOD's") Larrabee Collection Station ("LCS") - an onshore substation established by the SAA - engineering analysis by MAOD and PJM revealed that the autotransformers at the LCS were undersized.²⁰ Additionally, a number of SAA 1.0 projects have been cancelled due to refined needs analyses following initial component upgrades estimates or updates to the North Delta project - planned expansions near the Pennsylvania/Maryland border, near the Susquehanna River - during the 2022 Window 3 RTEP, which was studied in December 2023, that made certain SAA 1.0 upgrades obsolete. The last adjustment captured is a cost allocation adjustment also stemming from the 2022 Window 3 RTEP.²¹ Other parts of the North Delta project requiring additional reliability upgrades have been recategorized by PJM under the multi-driver project framework.²² Per the PJM Operating Agreement and cost allocation methodology, the additional costs associated with this multi-driver will not result in a cost change at this time for the SAA, but the allocation of the total project cost has changed.²³ These cost, scope, and allocation changes will not affect the expected completion dates of the SAA projects, and all projects are expected to be completed on or before schedule.

While this Board Order memorializes an overall cost decrease to the SAA project costs of \$29 million, Staff appreciates the significance of cost increases and ratepayer impacts. Of critical importance throughout the SAA process was the baseline scenario, or the cost of the transmission facilities that would be necessary to achieve New Jersey's 7,500 MW OSW goal in the absence of the SAA solicitation ("Baseline Scenario").

Using the Baseline Scenario cost estimates and the SAA project cost estimates, Brattle and Staff were able to determine that, at the time of the SAA award by the Board's issuance of the SAA 1.0 Award Order on October 26, 2022, New Jersey ratepayers would realize an estimated savings of

¹⁹ SAA Order at 73. <u>See also</u> PJM Rate Schedule 49, paragraphs 3, 4, 5, and 7.

²⁰ The LCS is a new substation adjacent to the existing JCP&L Larrabee substation awarded to enable offshore wind interconnection through SAA 1.0.

²¹ A "cost allocation" refers to the mechanisms under which PJM distributes costs amongst parties through its Tariff. See PJM Tariff, Schedule 12.

²² A "multi-drive" project combines separate solutions for different drivers of transmission enhancements – such as reliability, economic, and public policy projects – into a single more efficient project. PJM Operating Agreement, Schedule 6, section 1.5.10(h).

²³ See PJM Tariff, Schedule 12(b)(xiv).

over \$900 million dollars with the awarded SAA projects, compared to the Baseline Scenario.

As transmission projects develop, it is common, if not expected, for cost estimate adjustments to occur. In fact, PJM typically sees a range of cost estimate adjustments beginning at the time a project is bid into the RTEP until the time of that project's final construction. As such, additional cost estimate adjustments, in addition to the cost estimate adjustments noted herein, may be anticipated in the future. Staff remains committed to closely engaging with PJM and the awarded SAA project developers to ensure all cost estimate adjustments are reasonable, while continuing to prioritize the interests of New Jersey ratepayers.

General Scope and Cost Adjustments

Changes to the scope of several of the awarded SAA projects ("Scope Change Work") have been identified. A summary of such scope changes are as follows:

Atlantic City Electric Company ("ACE")

- <u>Cancel b3737.24:</u> Upgrade Cardiff-Lewis 138 kV transmission line (previous cost estimate \$0.10 million); and
- <u>Cancel b3737.25</u>: Upgrade Lewis No. 2-Lewis No. 1 138 kV by adding a circuit breaker (previous cost estimate \$0.50 million).

<u>Explanation of change for b3737.24 and b3737.25</u>: A facility inspection identified an incorrect component rating. With the revised rating, this work is no longer needed to address potential reliability criteria violations.

PSE&G

 <u>Cancel b3737.41</u>: Windsor to Clarksville subproject: Upgrade terminal equipment at Clarksville 230 kV (previous cost estimate \$1.49 million).²⁴

Explanation of change for b3737.41: After detailed analysis by PSE&G on the Clarksville sub-project, it was determined that the Clarksville terminal scope of work is no longer needed.

- <u>Revised Cost Estimate b3737.42</u>: Upgrade plant equipment at Lake Nelson I 230 kV (previous cost estimate \$4.80 million, updated cost estimate \$8.00 million);
- <u>Revised Cost Estimate b3737.43</u>: Upgrade Kilmer W-Lake Nelson W 230 kV connections at Lake Nelson 230 kV (previous cost estimate \$0.57, updated cost estimate \$1.40 million); and
- <u>Revised Cost b3737.44</u>: Upgrade Lake Nelson-Middlesex-Greenbrook W 230 kV connections at Lake Nelson 230 kV (previous cost estimate \$0.58 million, updated cost estimate \$0.70 million).

Explanation of changes for b3737.42, b3737.43, and b3737.44: PSE&G performed detailed analysis to refine the cost estimates for the Lake Nelson project, leading to an

²⁴ The Windsor and Clarksville subproject is located in Lawrence Township, New Jersey.

increase in cost. Specifically, PSE&G explained that its engineering team recommended replacements to its dead-end structures to maintain contingencies and reliability.

MAOD

• <u>Revised Cost Estimate b3737.22</u>: Cost increase of \$0.8M.

Explanation of changes for b3737.22: In order to meet compliance with reactive power requirements, the auto transformers sizing on the 500 KV line from the LCS to Smithburg needs to increase from 450 MVA to 480 MVA.²⁵

The changes described above and shown below result in a net cost increase of \$2.86 million to SAA 1.0. Staff finds that these changes are prudent and recommends Board approval.

Project ID	Developer	Change Description	Original (\$M)	Current (\$M)	Change (\$M)
b3737.24	ACE	Cancel work	\$0.10	\$0.00	(\$0.10)
b3737.25	ACE	Cancel work	\$0.50	\$0.00	(\$0.50)
b3737.41	PSE&G	Cancel work	\$1.49	\$0.00	(\$1.49)
b3737.42	PSE&G	Revised cost estimate	\$4.80	\$8.20	\$3.20
b3737.43	PSE&G	Revised cost estimate	\$0.57	\$1.50	\$0.83
b3737.44	PSE&G	Revised cost estimate	\$0.58	\$0.70	\$0.12
b3737.22	MAOD	Revised cost estimate	\$193.59	\$194.29	\$0.80
				SUM	\$2.86

North Delta Project – Cost Reductions for the SAA

The SAA projects required updates to the North Delta station near the Pennsylvania/Maryland border and connecting infrastructure. These updates would be completed by Baltimore Gas and Electric Company ("BGE") and PECO Energy Company ("PECO"). Through the 2022 RTEP, PJM determined that additional upgrades would be needed to account for other changes on the PJM system, such as supporting the added energy injection from offshore wind developments and supporting load demand in Northern Virginia. Certain components of the planned upgrades would be cancelled and replaced with more robust solutions. PJM determined that these new solutions would not be eligible for multi-driver cost allocation, and the SAA would have no longer have cost obligation for the solutions.

²⁵ "MVA" means Mega Volt Ampere.

BGE

- <u>Cancel b3737.46</u>: Install a new breaker at Graceton 230 kV substation to terminate a new 230 kV line from the new greenfield North Delta station (previous cost estimate \$1.55 million); and
- <u>Cancel b3737.56</u>: Build a new North Delta-Graceton 230 kV line by rebuilding 6.26 miles of the existing Cooper-Graceton 230 kV line to double circuit. Cooper-Graceton is jointly owned by PECO & BGE. This subproject is for BGE's portion of the line rebuild, which is 2.16 miles. (previous cost estimate \$9.92 million)

Explanation of changes for b3737.46 and b3737.56: These projects are no longer needed based on the revised scope of North Delta station.

PECO Energy Company ("PECO")

- <u>Cancel b3737.48</u>: Build a new North Delta-Graceton 230 kV line by rebuilding 6.26 miles of the existing Cooper-Graceton 230 kV line to double circuit. Cooper-Graceton is jointly owned by PECO & BGE. This subproject is for PECO's portion of the line rebuild which is 4.1 miles (previous cost estimate \$18.82 million); and
- <u>Cancel b3737.49</u>: Bring the Cooper-Graceton 230 kV line "in and out" of North Delta by constructing a new double-circuit North Delta-Graceton 230 kV (0.3 miles) and a new North Delta-Cooper 230 kV (0.4 miles) cut-in lines (previous cost estimate \$1.56 million).

Explanation of changes for b3737.48 and b3737.49: These projects are no longer needed based on the revised scope of the North Delta station.

The cancellation of these four (4) projects, as described above, result in a net decrease of \$31.85 million from the costs of SAA 1.0.

Project ID	Developer	Change Description	Original (\$M)	Current (\$M)	Change (\$M)
b3737.46	BGE	Cancel work	\$1.55	\$0.00	(\$1.55)
b3737.48	PECO	Cancel work	\$18.82	\$0.00	(\$18.82)
b3737.49	PECO	Cancel work	\$1.56	\$0.00	(\$1.56)
b3737.56	BGE	Cancel work	\$9.92	\$0.00	(\$9.92)
				SUM	(\$31.85)

North Delta Project - Cost Allocation Adjustments

In addition to the changes noted above, PJM's 2022 RTEP found that other changes to the North Delta infrastructure qualify for multi-driver cost allocation.²⁶ The change in scope for the project makes for a new total cost of \$104.1 million, instead of the initially proposed \$76.27 million. However, the multi-driver cost allocation results in no net change to the SAA project's cost. The

²⁶ For detailed description of the North Delta changes and cost allocations, please see PJM's filing at FERC. <u>PJM Interconnection, L.L.C.</u>, FERC Docket No. ER24-843 (Jan. 10, 2024).

added costs will be allocated through PJM's reliability framework.²⁷ The change in scope and treatment results in no net change in the cost estimate allocated to the SAA 1.0 project.

Transource

<u>Modify b3737.47</u>: Build New North Delta 500 kV substation (four bay breaker and half configuration) - the substation will include 12 – 500 kV breakers and one 500/230 kV transformer, and will allow the termination of six - 500 kV lines.

<u>Explanation of changes for b3737.47:</u> The scope of the North Delta substation will be expanded to support the additional reliability needs. PJM will treat this project as a multidriver project to share the costs between the New Jersey SAA public policy project need and 2022 Window 3 reliability needs as follows:

Need	Cost (\$M)	% Cost Allocation ²⁸
NJSAA	\$76.27	73.27%
Reliability	\$27.83	26.73%
Total	\$104.10	100%

The total cumulative cost changes captured in this Order result in a \$29 million cost decrease to the SAA 1.0 project.

Rate Counsel Correspondence

Staff provided the New Jersey Division of Rate Counsel ("Rate Counsel") information on these updates prior to today's Order. Rate Counsel did not object to the Board approving and acknowledging these changes. Rate Counsel continued to request that Staff regularly communicate with Rate Counsel's office to consider the potential ratepayer impact of future changes in cost or scope.

III. DISCUSSION AND FINDINGS

Based on the review of the information presented above and Staff's recommendation, the Board also <u>HEREBY</u> <u>APPROVES</u> the modification of PSE&G and MAOD's designated scope of work and costs as discussed above and <u>HEREBY</u> <u>DIRECTS</u> PSE&G and MAOD to engage with PJM so that it may take the necessary steps to effectuate such modification on a timely basis. The Board <u>HEREBY</u> <u>FURTHER</u> <u>DIRECTS</u> PSE&G and MAOD to update Staff regularly on the PJM amendment process, including, but not limited to, schedule updates and any cost estimate adjustments.

For the scope-related adjustments, including the cancelled projects cost allocation adjustments discussed herein, the Board <u>HEREBY</u> <u>ACKNOWLEDGES</u> these adjustments to the SAA 1.0 projects. The Board also <u>HEREBY</u> <u>REAFFIRMS</u> that all of the benefits associated with the Larrabee Tri-Collector Solution will continue to be realized by the residents of New Jersey, and

²⁷ Id. at Appendix A.

²⁸ The SAA will be responsible for 74.27% of the total cost of \$104.10 million, which equates to a cost responsibility of \$76.27 million.

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that New Jersey's ratepayers will continue to see a savings of approximately \$900 million as a result of the SAA projects being utilized to achieve New Jersey's OSW public policy.

As stated in the SAA Order and again here, the Board finds that future revisions to the projects awarded under the SAA may be required. The Board <u>HEREBY RETAINS THE RIGHT</u> to enter further orders in this docket as deemed necessary to reflect significant updates to the scope, configuration and/or cost of projects on the basis of any future changed circumstances. In addition, should PJM or Staff identify routine changes to elements of any awarded SAA projects that would increase the benefits to New Jersey ratepayers, the Board <u>HEREBY</u> <u>AUTHORIZES</u> Staff to review and accept these revisions, and notify PJM of the same.

The effective date of this Order is March 27, 2024.

DATED: March 20, 2024

ZENON CHRISTODOULOU

BOARD OF PUBLIC UTILITIES BY:

GUHL-SADOV TINE

PRESIDENT

COMMISSIONER

MICHAEL BANGE COMMISSIONER

ATTEST:

DR

COMMISSIONER

SHERRIL. GOLDEN

I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities.

IN THE MATTER OF DECLARING TRANSMISSION TO SUPPORT OFFSHORE WIND A PUBLIC POLICY OF THE STATE OF NEW JERSEY

DOCKET NO. QO20100630

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