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Agenda Item: 2C

STATE OF NEW JERSEY

Board of Public Utilities
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ENERGY

IN THE MATTER OF THE BPU INVESTIGATION OF RESOURCE ADEQUACY ALTERNATIVES	)	ORDER
	)	DOCKET NO. EO20030203

BY THE BOARD:

By this Order, the New Jersey Board of Public Utilities ("Board") accepts the 2022 Progress Report on New Jersey's Resource Adequacy Alternatives ("2022 Progress Report" or "Report") prepared by Board Staff ("Staff"), in association with the Brattle Group ("Brattle"). A draft version of the 2022 Progress Report was released for comments in September 2022. After review of the comments, Staff produced the final version of the report which incorporated relevant stakeholder feedback. This Order summarizes the comments received and responds to stakeholder concerns, however, details on Staff's progress in the Investigation of Resource Adequacy Alternatives are provided in the 2022 Progress Report. The Order further accepts the findings and recommendations of the 2022 Progress Report and directs Staff to continue advocating within the PJM Interconnection LLC ("PJM") stakeholder process, consistent with the recommendations set forth in the Report.

BACKGROUND

The Global Warming Response Act,[1] the Clean Energy Act,[2] Governor Murphy's Executive Order No. 28,[3] and the 2019 Energy Master Plan: Pathway to 2050 ("EMP")[4] have all committed New Jersey to make strides toward a predominantly clean energy economy. The 2019 EMP also laid out a comprehensive roadmap for achieving the transition to a 100% clean energy future by 2050. Furthermore, on February 15, 2023, Governor Phil Murphy signed Executive Order No. 315,[5] which seeks to accelerate New Jersey's clean energy transition by setting a goal of annually

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[1] "The Global Warming Response Act" at N.J.S.A. § 26:2C-37 (P.L 2007, c.112)

[2] An Act Concerning Clean Energy, Amending and Supplementing P.L. 1999, c.23, Amending P.L. 2010, c.57, and Supplementing P.L.2005, c.354. ("Clean Energy Act" P.L. 2018, c.17).

[3] Executive Order No. 28 (May 23, 2018).

[4] *See* 2019 New Jersey Energy Master Plan: Pathway to 2050 (Jan. 27, 2020).

[5] Executive Order No. 315 (Feb. 15, 2023).

matching 100% of New Jersey's electricity consumption with clean energy by 2035. These actions by New Jersey further underscore the importance of aligning the wholesale electricity markets in which New Jersey participates with the State's clean energy policies.

1. Genesis of the Board's Investigation into Resource Adequacy Alternatives

In 2019, the Federal Energy Regulatory Commission ("FERC") directed PJM to institute a series of rule changes to the PJM capacity market which the 2019 Energy Master Plan characterized as "actively attempting to support fossil fuel interests in the [PJM] region under the guise of promoting 'fair' competition."[6] Specifically, FERC ordered PJM to expand its Minimum Offer Price Rule ("MOPR") to apply an artificial "floor" on capacity market bids from carbon-free and renewable generation resources receiving state incentives.

PJM's capacity market, the Reliability Pricing Model ("RPM"), has included a MOPR since it began procuring resource adequacy for the PJM region in 2006. The MOPR traditionally only applied to resources most capable of exercising market power, it therefore did not apply to renewable resources. However, on December 19, 2019, FERC reversed the long-standing precedent that renewable resources did not threaten the integrity of PJM's capacity market and imposed the MOPR on all resources receiving state support. This expanded MOPR effectively excluded clean resources from the PJM capacity market and was anticipated to increase capacity prices by approximately $260 million per year for New Jersey customers, and $1,700 million per year across the entire PJM footprint.[7] The MOPR thus threatened the states' ability to align wholesale electricity market purchases with their public policy goals, especially those aimed to transition to a clean generation mix.

In direct response to FERC's MOPR ruling, on March 27, 2020, the Board directed Staff to evaluate "whether New Jersey can achieve its long-term clean energy and environmental objectives" while participating in the regional electricity markets administered by PJM. The Board also directed Staff to investigate and return with recommendations on "how to best meet New Jersey's resource adequacy needs in a manner consistent with the State's clean energy and environmental objectives, while considering costs to utility customers."[8] The Board hired a consultant, the Brattle Group ("Brattle"), to assist in the investigation and model and assess alternative resource adequacy structures that may better support New Jersey's public policy goals.

Following written comments provided by stakeholders, Staff held a Technical Conference on October 2, 2020, to further examine "whether New Jersey can achieve its long-term clean energy and environmental objectives under the current resource adequacy paradigm."[9] The Technical Conference consisted of three (3) panel sessions educating the Board, Staff, and the general public on different resource adequacy alternatives and the importance of this investigation with

[6] 2019 New Jersey Energy Master Plan: Pathway to 2050 (Jan. 27, 2020).

[7] Alternative Resource Adequacy Structures for New Jersey: Staff Report on the Investigation of Resource Adequacy Alternatives 6 (June 2021).

[8] In re the BPU Investigation of Resource Adequacy Alternatives, BPU Docket No. EO20030203 (Mar. 27, 2020).

[9] Public Notice of Technical Conference in the Investigation of Resource Adequacy Alternatives, BPU Docket No. 20030203 (July 14, 2020).

respect to the 2019 EMP's goal of achieving 100% clean energy by 2050.

In response to the October 2nd Technical Conference, PSEG and Exelon Generation Company LLC ("Exelon") submitted an FRR proposal for the Board to consider, which would require New Jersey to exit the RPM and self-procure the State's resource adequacy needs. On November 9, 2020, Staff hosted a Work Session to discuss the pros and cons of the proposals and new alternative approaches.[10] Additionally, Staff followed up this Work Session by hosting two (2) additional Work Sessions to delve into specific issues. The first additional Work Session, which took place on February 19, 2021, explored alternatives to the integration of clean energy goals into the resource adequacy structures, and whether such alternatives would lower the cost and accelerate the timeline of achieving those goals while ensuring sufficient generation resources are available to meet demand.[11] The second Work Session took place on March 19, 2021, to discuss financial modeling performed by the Board's consultant, Brattle, on the different proposed alternatives and to explore the cost of the MOPR.[12]

2. The July 2021 Alternative Resource Adequacy Structures for New Jersey Report

In July 2021, Staff issued *Alternative Resource Adequacy Structures for New Jersey*, a Staff Report on the Investigation of Resource Adequacy Alternatives ("2021 Report"). The 2021 Report modeled various alternative resource adequacy structures' impact on prices and clean energy deployment.

The 2021 Report made four (4) main findings, which continue to guide this investigation:

1) Incorporating New Jersey's clean energy goals in the regional markets is the most efficient way to provide New Jersey consumers with reliable, affordable, *and* carbon-free electricity.

2) Existing regional market structures have fulfilled their design objectives to maintain reliability at competitive prices, but have lagged behind in addressing state clean energy policies.

3) Regulatory development at the regional and national level make it premature to consider leaving the regional market structure.

4) New Jersey should continue to explore the option to implement a New Jersey or multi-state Integrated Clean Capacity Market ("ICCM").

On July 14, 2021, the Board accepted the 2021 Report and its findings; aligning regional markets with New Jersey's clean energy goals is the most efficient way to provide customers with reliable, affordable, and carbon-free electricity. The Board directed Staff to engage in efforts to develop regional market reforms or new regional clean energy market discussions to assess whether PJM and its stakeholder processes have demonstrated sufficient progress towards viable regional market reforms. If not, the Board directed Staff to consider whether New Jersey should

[10] Notice of Work Session to be held on November 9, 2020, in the Investigation of Resource Adequacy Alternatives. BPU Docket No. 20030203 (Oct. 28, 2020).

[11] Notice of Work Session to be held on February 19, 2021, in the Investigation of Resource Adequacy Alternatives. BPU Docket No. 20030203 (Jan. 21, 2021).

[12] Notice of Work Session to be held on March 19, 2021, in the Investigation of Resource Adequacy Alternatives. BPU Docket No. 20030203 (Mar. 15, 2021).

independently pursue its preferred clean resource procurement platform. Staff was further instructed to return in one (1) year to report on its efforts and make any further recommendations.

Also, in July 2021, PJM filed revisions to its Open Access Transmission Tariff ("OATT") to change the application of the MOPR in its capacity markets to no longer discriminate against state-supported clean energy resources ("Reformed MOPR"). On September 29, 2021, the Reformed MOPR became effective by operation of law. The Reformed MOPR has been challenged in federal court, where the court opinion is now pending. .

3. The September 2022 Alternative Resource Adequacy Investigation Progress Report

In September 2022, Staff released a draft report providing a formal update to the Board and the public on the Resource Adequacy Investigation, the *2022 Progress Report on New Jersey's Resource Adequacy Alternatives: Update Regarding Staff's Investigation of Resource Adequacy Alternatives* ("2022 Progress Report"). The 2022 Progress Report built upon the recommendations of the 2021 Report, recommending that:

1. The Board can meet the State's clean energy targets at substantially lower costs by participating in a regional clean energy "buying pool," such as an ICCM or similar market structure, to purchase clean energy attributes on behalf of New Jersey consumers and other interested state, corporate, and municipal buyers;

2. The Board should adopt a formal policy preference for relying on clean electricity technologies instead of fossil fuel generators to meet its reliability needs, which means purchasing sufficient capacity from non-carbon emitting resources to meet New Jersey's resource adequacy needs; and

3. While regional efforts continue to be uncertain, the Board should consider developing a regional voluntary forward clean energy market.

The 2022 Progress Report provides a deeper analysis of four preferred market mechanisms, their implementation challenges, the cost and clean energy deployment level. The solution options prioritized for this analysis were as follows:

- A PJM administered Forward Clean Energy Market ("PJM-FCEM"), which would require PJM administering a regional, voluntary clean energy market to broaden the pool of clean energy resources available to provide a newly defined regional clean energy product known as a clean energy attribute credit ("CEAC") that is procured on a 3-year forward basis.

- A New Jersey-led Forward Clean Energy Market ("NJ-FCEM"), which would require New Jersey developing a regional clean energy market, open to other states and voluntary buyers, to broaden the pool of clean energy resources available to provide CEACs procured on a 3-year forward basis.

- A PJM-wide Integrated Clean Capacity Market ("PJM-ICCM"), which would require PJM adjusting the market clearing mechanism currently used in the BRA so that buyers with a clean energy demand can simultaneously submit this demand with capacity offers to co-optimize resources cleared in the BRA.

- A New Jersey Integrated Clean Capacity Market ("NJ-ICCM"), which would require New Jersey exiting the PJM capacity market through the FRR Alternative and developing a market that co-optimizes clean energy purchases with the capacity purchases required to meet the State's Resource Adequacy Needs.

The 2022 Progress Report also proposed two (2) new concepts not discussed in the 2021 Report. First, it recommended that the Board consider a Clean Capacity Credit ("CCC") concept where New Jersey Basic Generation Suppliers ("BGS") and Third-Party Suppliers ("TPS") would be required to purchase a certain number of CCCs each year that is proportional to their capacity obligations, this is similar to the requirements of the existing Renewable Portfolio Standard ("RPS").

Second, the 2022 Progress Report also proposed carbon-indexing CEACs and renewable energy credits ("RECs"). Indexing refers to the concept that the value of a REC will be directly tied to the carbon-intensity of the grid when the REC is produced and therefore appropriately compensates resources for offsetting carbon-dioxide emissions by producing energy at times and locations where marginal grid emission are highest.

4. Post-2021 Market Design Efforts

Since the release of the 2021 Report, two (2) additional regional efforts launched as other states and industry members began seeking more efficient ways to decarbonize the electric grid while maintaining reliability. In September 2021, the Organization of PJM States Inc. ("OPSI") chartered the Competitive Policy Achievement Working Group ("CPAWG"). Staff has vigilantly participated in CPAWG discussions by advocating for a regional clean energy market solution, as directed by Board. In April 2022, PJM formed the Clean Attribute Procurement Senior Task Force ("CAPSTF") allowing states and fellow stakeholders to collaborate on potential future solutions, including the type of forward clean energy and clean capacity market designs analyzed by the Board in connection with this proceeding.

SUMMARY OF COMMENTS

After proper Notice, a Stakeholder Meeting was held on October 11, 2022, at which, Staff provided a presentation to the public explaining the key findings and recommendations in the 2022 Progress Report and taking initial comment from stakeholders. The Board also accepted written comments through October 25, 2022. Below is a summary of the comments received and Staff's response.

New Jersey Division of Rate Counsel ("Rate Counsel")

Comment: Rate Counsel is generally supportive of continuing efforts that both explore and develop various options but states that any final decisions would be premature at this time. Rate Counsel believes the 2022 Progress Report was speculative in its analysis and may not support Staff's findings that these design options offer proven economic efficiencies or other environmental benefits.

Staff Response: Staff appreciates Rate Counsel's insights and general support for continuing to explore market-based solutions. Staff notes that it has updated the 2022 Progress Report to further explain the basis for its modeling conclusions and to more clearly explain that Staff continues to rely on the modeling assumptions and inputs from the 2021 Report. The 2022 Progress Report was intended to be a supplemental report in the ongoing investigation, but Staff

has updated the 2022 Progress Report to provide additional necessary information. [13]

Comment: Rate Counsel raised four (4) potential design challenges associated with Staff's Clean Energy Attribute Credit concept that it believes hold true regardless of which solution is ultimately implemented. First, Rate Counsel suggested that implementing either an ICCM or FCEM outside of PJM and under the FRR Alternative would require legislative action. Second, Rate Counsel believes that a homogenous CEAC product would not identify different attributes of specific resource types (i.e. distinguishing offshore wind from nuclear or a new generation technology) that if distinguished would impact a buyers willingness to pay. Rate Counsel further identified this concern as a flaw that may result in uncompetitive markets, and that solving this with multiple CEAC definitions is unacceptable because it would create winners and losers. Third, Rate Counsel argued that Staff's proposed concept of "additionality" would also create winners and loser and would likely be challenged as a discriminatory market parameter.[14] Lastly, Rate Counsel believes that there will be a significant misalignment between buyers and sellers participating in the market and therefore any alternative compliance payment, or opportunity cost or participation, should be set equal to the expected value of a 20-year power purchase agreement that could be made outside of the market.

Response: Staff agrees with Rate Counsel that the FRR option is not in the State's best interest at this time and clarifies that neither the ICCM nor FCEM would require leaving the PJM capacity market and acquiring resources via the FRR Alternative. Further, Staff notes that regardless of if New Jersey implements a CEAC market or maintains the status quo, the ability to use a regional procurement mechanism would both enhance the availability of clean energy products and tend to drive those costs down as a result of additional competition between buyers and sellers while being much more efficient than soliciting power purchase agreements. Staff also clarifies that the CEAC does not replace existing REC programs, which reward specific technology attributes, as the program is envisioned to create a cheaper CEAC that meets a specific REC's needs can be used as a substitute for compliance purposes.

Comment: Rate Counsel agreed with Staff's proposal to adopt a dynamic product, by indexing the level of abatement each REC or CEAC is associated with. Rate Counsel views this concept as a necessary feature of a future ICCM or DCEM.

Response: Staff is excited to work with Rate Counsel in future discussions around the carbon-indexing concept.

Comment: Instead of proceeding in a parallel New Jersey-led FCEM, as recommended in the report, Rate Counsel suggested that the Board's resources instead be dedicated to the regional efforts.

Response: Staff agrees that a regional approach is the preferred solution and will remain fully engaged at that level. However, the 2022 Progress Report acknowledges the potential that the regional consensus building efforts may not result in the creation of a regional clean energy market solution. In which case, Staff's analysis demonstrates that the next cheapest option may be for New Jersey to pursue a go-at-it alone solution, open to other voluntary participants.
Comment: Rate Counsel believes implementing a CCC program is premature at this time, given

[13] See Updated 2022 Progress Report at 30.

[14] "Additionality" is a concept for promoting the construction of new clean energy resources. See the 2022 Progress Report at 35, for a detailed explanation of this concept.

the uncertainty around how such a market would be structured and the price impacts.

Response: Staff's recommendation at this time is to further explore and develop this concept without prematurely implementing the program. There is an undeniable uncertainty about how technology and markets will develop over the next decade. The purpose of Staff's Investigation into Resource Adequacy Alternatives is to inform stakeholders about options such that New Jersey can prioritize and invest in the most prudent strategies that will enable the state to pursue available decarbonization tactics and technologies today, while remaining flexible to pursue alternative paths in line with future developments. Further, Staff agrees that the Board should explore cost containment mechanisms, such as an alternative compliance payment, to avoid higher prices.

Comment: Rate Counsel recommended that the Board add carbon pricing and a hybrid approach to long-term and short-term markets to its options of potential solutions.

Response: Staff has considered carbon pricing as a solution option and believes that it could be a viable long-term market design solution. However, at this time, there does not appear to be sufficient nation-wide consensus, let alone PJM or regional support, to address leakage externalities associated with carbon pricing. Therefore, Staff does not recommend the Board prioritize carbon pricing over other possible solution sets at this time. However, Staff does note that its proposal to explore carbon indexing of RECs accomplishes some (but not all) of the benefits of a carbon price, with considerably less development risk.

PJM Interconnection, LLC ("PJM")

Comment: PJM, as New Jersey's regional transmission provider, appreciates Staff's efforts in both this proceeding and the parallel regional working group/senior task force. PJM recommended that New Jersey continue to rely on PJM markets and remains optimistic that their senior task force will best inform any implementation of a regional clean attribute market. PJM looks forward to continued collaboration with Staff and the Board in both this investigation and the efforts of the CAPSTF and CPAWG.

Response: Staff's is committed to continuing to engage at the regional level and has recommended in the report that New Jersey be an advocate for the ICCM solution in the CAPSTF.

Rockland Electric Company ("RECO")

Comment: RECO generally supports the development of innovative solutions that will promote competition and aim to lower costs of the clean energy transition. RECO recommended that the Board instead use a comprehensive stakeholder process to fully flush out these design options and to identify true cost impacts and associated benefits. Further, RECO believes that the CCC concept should be examined in a stakeholder proceeding to allow for the input from the public on how to calculate such costs and purchase obligations. RECO also questioned the distinction between a potential CCC and CEAC or existing RECs.

Response: Staff agrees that the Board should conduct a comprehensive stakeholder process before implementation of a state-specific clean energy market, and that additional design work would need to be performed before any program was implemented. Staff would also like to clarify that a CCC would not replace CEACs or RECs and would serve as a separate product. Staff has

clarified this concept in the 2022 Progress Report.[15]

Comment: RECO supported solution options that utilize PJM markets, even if these markets must be modified to better reflect state policies and recommends that the Board prioritize maintaining an appropriate reserve margin through PJM.

Response: The 2022 Progress Report agrees that a regional solution is the preferred outcome and commits to working with PJM and its stakeholders to fully explore various market design options.

Comment: RECO requested that the Board consider granting electric utilities certain authorization to assist the state in meeting clean energy goals, for example: the ability to permit large-scale renewable resources and/or energy storage for cost-efficient deployment.

Response: Staff agrees that New Jersey utilities are key players in meeting the needs of the clean energy transition, particularly through the effective provision of monopoly services, such as ensuring that distribution and transmission facilities are sufficient to meet the needs of a decarbonized grid, and by timely interconnecting new clean resources. Comments around utility's use of ratepayer dollars to compete against private capital for clean energy or storage incentives are outside the scope of this proceeding, but have been comprehensively addressed in other proceedings, including the Successor Solar Incentive Program. There, the Board concluded that ratepayer funding of renewable generation tends to replaces private, at risk, capital with scarce ratepayer capital, and has historically resulted in substantially higher costs for consumers, is at odds with the restructured markets established in the Electric Discount and Energy Competition Act ("EDECA"), N.J.S.A. 48:3-49, *et seq*., and are therefore not a preferred policy outcome.

Independent Energy Producers of New Jersey ("IEP NJ")

Comments: IEP NJ believes that use of a regional or state-level clean capacity market to secure capacity from out-of-state clean energy is in direct conflict with the goals of the Energy Master Plan, which calls for in-state clean energy and long-term job development. Instead, IEP NJ recommended that the Board focus on existing pathways and utilizing current state programs to meet the States goals. Additionally, IEP NJ criticized the report's high-level display of the analysis performed and claims that there was not information for the public to review for reasonableness.

Response: Staff appreciates IEP NJ's perspective, but respectfully notes that the 2019 EMP specifically directed the Board to consider both in-state and out-of-state clean energy needs.[16] Staff further notes that New Jersey currently relies on a significant portion of out-of-state capacity to maintain system reliability. Unless the PJM market develops a mechanism for New Jersey to signal is policy preference for capacity from non-emitting resources, there is no feasible way to address the carbon emissions from these out-of-state resources. Such an outcome is directly contrary to the State's need to increase the abatement of greenhouse gas emissions and the plain language of the EMP. However, Staff has clarified that the modeling inputs and assumptions that

[15] See Updated 2022 Progress Report at 48-50.

[16] *See, e.g.,* 2019 EMP, at p. 16, summarizing the results of the Integrated Energy Plan modeling exercise ("Both in-state investment and regional coordination are needed to meet New Jersey's needs and emissions targets at least cost.") and at p. 17 ("Coordination with neighboring states and regional markets can allow New Jersey to complement in-state renewables with low-cost, out-of-state resources.")

went into the analysis in the 2022 Progress Report are consistent to that of the 2021 Report.

Comment: IEP NJ suggested that the 2022 Progress Report address a number of other policy issues, including: the future of natural gas in the resource mix, carbon-dioxide leakage from neighboring states not in RGGI or other carbon mitigation efforts, and the Inflation Reduction Act.[17]

Response: While Staff agrees that these are critical policy items, they are outside the scope of this proceeding, which is focused on resource adequacy alternatives. Finally, Staff agrees that the Inflation Reduction Act will spur significant additional development of clean energy resources and put downward pressure on the costs of the clean energy transition. These trends will only decrease the costs of meeting the clean energy targets analyzed in the Report. Staff therefore agrees with the commenter that the various analyses represent a highly conservative estimate of costs.[18]

Comment: IEP NJ believes that Staff's legal analysis regarding the Board's authority to mandate purchases of clean capacity by BGS and TPS does not sufficiently prove the Board's ability to implement this program. Specifically, IEP NJ pointed to existing clean energy purchase programs, stating that each were created by legislation; and that without such legislation no statutory authority exists for the Board.

Response: Staff respectfully disagrees with IEP NJ's analysis, and notes that the 2022 Progress Report includes a legal analysis for the concepts proposed by Staff, which notes both the Board's general statutory authority to regulate electric services in New Jersey, including the authority to "require any public utility to furnish safe, adequate and proper service, including furnishing and performance of service in a manner that tends to conserve and preserve the quality of the environment and prevent the pollution of the waters, land and air of this State," as well as the specific authority under the RPS enabling legislation to "place greater reliance on competitive markets, with the explicit goal of encouraging and ensuring the emergence of new entrants that can foster innovations and price competition," among other directives.

American Clean Power Association ("ACPA")

Comment: ACPA supported much of Staff's findings and recommendations in the 2022 Progress Report. ACPA supported the CCC concept and requested that the Board create a development timeline that will allow for its implementation within the 2023 calendar year. ACPA requested that in any future CCC program have sufficient market rules to incent new clean capacity and an alternative compliance payment structured to only be used when there are no feasible CCC options.

Response: Staff largely agrees with ACPA on both the need for these components in any future program and that Staff should begin developing such program as soon as feasibly possible. Further, the 2022 Progress Report addresses both an incentive for *new* capacity, referred to as

[17] *See* Inflation Reduction Act, Public Law No. 117-169 (August 16, 2022). The Inflation Reduction Act will spur the deployment of clean energy due to the incentives contained therein.

[18] See, e.g. Cleaner Faster CheaperL Impacts of the Inflation Reduction Act and a Blueprint for Rapid Decarbonization in the PJM Interconnection Jesse Jenkins et al (December 2022).

"additionality"[19], as well as need to appropriately calculate an ACP.[20] Staff agrees that the ACP should be set high enough to ensure that the market attracts new clean capacity, but also recognizes the need to balance those goals with the necessity of keeping energy affordable for New Jersey consumers.

Retail Energy Suppliers Association ("RESA")

Comment: RESA supported Staff's focus on using competitive markets for future procurement of clean energy products, including additional RECs. RESA views the FCEM as a potentially excellent procurement option but encourages the Board to not rush into it alone. Consistent with Staff's recommendations, RESA believes that NJ should talk with other states, and potentially even enter into a Memorandum of Understanding with other states, to be participants in a market that is either NJ- or multi-state-led and to continue to participate in the efforts towards a regional solution.[21] RESA opposed acting under the FRR alternative and believes that any future market would be best run under the administration of PJM.

Response: Staff appreciates RESA's focus on competitive market solutions, and agrees that a regional approach is the preferred solution. As noted above, Staff regularly works with other state regulators, and has been an active participant in the OPSI-sponsored CPAWG process, which is designed to build the type of multi-state consensus REA advocates.

Comment: RESA largely supported the CCC concept but notes that there are some crucial implementation questions not addressed in the draft 2022 Progress Report. The first was regarding interaction between CCC purchase obligation and current supplier REC obligations, and whether the RPS requirements will need to be amended. Second, RESA wanted to ensure that such purchase obligations could be fulfilled through bilateral transactions and self-supply in addition to competitive procurement.

Response: Staff has updated the report to make the interaction between the CCC and REC programs clearer.[22] Staff agrees that the bilateral contracts will remain an important tool for load serving entities ("LSEs") in New Jersey, and it was Staff's intention that the purchase obligation could be met either through the centralized market or the bilateral market, and has been made clear in the final report.[23]

Comment: RESA found the carbon indexing of RECs intriguing but requested further clarification on how identified carbon intensity would affect RPS and CCC obligations.

Response: Staff has provided greater detail on the ideal carbon indexing approach in the final Progress Report.[24]

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[19] See Updated 2022 Progress Report at 35.

[20] See Updated 2022 Progress Report at 49.

[21] See discussions in the 2022 Progress Report to make any NJ-led solution open to other states 26-27 and to continue to engage with other states through the OPSI Working Group 29.

[22] See Updated 2022 Progress Report at 45-47.

[23] See updated 2022 Progress Report at 47.

[24] See updated 2022 Progress Report at 39-40.

Advanced Energy Economy ("AEE")[25]

Comment: AEE believes that any solution that does not reform the capacity market to make it better align with the State's objectives is a "non-viable long-term option" and emphasized that the needs for a regional procurement market and expanded purchasing options not only aligns with the State's policy but also the desire of clean energy buyers. AEE believes that a regional solution will be most beneficial but agrees with Staff that "it is in the State's best interest to pursue a stand-alone clean energy market, open to voluntary participants…and a clean capacity requirement." AEE supported implementing a CCC program in either an ICCM or FCEM because without the capacity component, a regional market will not fully address the need to transition the resource mix while meeting a greater share of regional resource adequacy from clean and flexible resources.

AEE further agreed with the governance concerns Staff has laid out in the 2022 Progress Report and is cautious about solutions without a clear federal-state regulatory framework. AEE agreed with the OPSI governance model principles, which Staff intends to prioritize even under an NJ-led approach. AEE, consistent with Staff and several other parties' beliefs, believes that the FRR Alternative should only be used as a backstop and should not be pursued at this time.

Response: Staff notes AEE's comments and agrees, as noted above, the FRR Alternative is not Staff's preferred option.

Constellation

Comment: Constellation believes that several of the proposed regional models are complex and rely on PJM, FERC, or other states; and could take several years to implement. Therefore, Constellation recommended that the Board consider independent action. Constellation emphasized that under existing REC programs, even with a 100% annual procurement level, only 72% of hourly load will be matched with clean energy. Constellation requested that the Board consider a program inclusive of hourly matching of environmental attributes and electric consumption. Under such program, a certain percentage of load each hour would need to be matched with carbon-free generation. Constellation claimed that such program would be implemented much faster than the solution options presented in 2022 Progress Report because there is no need for a PJM stakeholder process or FERC approval.

Response: While Staff agrees that an hourly matching of generation and end-use consumption would address the same concerns Staff aims to fix through this investigation, Staff does not agree that it is the best option at this time or that it would be easier to implement than the existing solution options. At PJM and OPSI, hourly matching programs have been discussed by both the CAPSTF and the CPAWG and, while hourly matching represents an interesting approach, a mechanism to track such a product effectively does not exist. However, Staff notes that PJM has been working to facilitate hourly tracking through PJM GATS and commits to following such efforts.

Institute for Policy Integrity ("IPI")

Comment: The IPI encouraged Staff to provide clarity on key features of the design options,

[25] Staff notes that since these comments were filed, AEE has rebranded as "Advanced Energy United."

raising questions regarding specific differences between the various models. Specifically, IPI asked for clarity on whether the FCEM and the Voluntary Regional Clean Energy Market are the same solution and which solutions are specific to CEACs or CCCs or both.

Response: Staff intended for any of the solution options to be capable of integrating with or operating alongside the additional CCC program and has revisited the report to try and highlight, with more clarity, the distinction between the options discussed.

Comment: IPI recommended the Board redefine clean capacity to include certain non-generation resources, such as demand response and energy efficiency.

Response: Staff has clarified in the report that as proposed, Staff envisions a clean capacity program inclusive of qualifying non-generation resources.

Sierra Club

Comment: The Sierra Club supported transitioning to a clean capacity mix moving forward. Sierra Club argued that LSEs should only be allowed to purchase CCCs from generation resources that have also cleared in the Base Residual Auction and, that otherwise, the program would not successfully reduce purchases of capacity from fossil generators. The Sierra Club also believes that CEACs would attract investment in the right resources for New Jersey and that moving towards a solution with a state-led governance will be critical for any potential future market.

Response: Staff appreciates Sierra Club's comments, and agrees that state-led governance models are an important aspect of any future capacity market reforms. Staff likewise agrees that that any CCC program or clean capacity constraint would need to be structured so that resources supplying clean capacity contribute to meeting PJM's installed reserve margin.

Enel

Comment: Enel supported Staff's three main recommendations from the 2022 Progress Report and encouraged the Board to adopt them as policy statements. Enel believes that any version of an ICCM or FCEM without a clean capacity component are vastly inferior and will not serve as a practical pathway to achieve high emission reductions at minimal cost to consumers. Specifically, Enel maintained that a CCC would promote technologies that are in the State's interest and critical to maintaining reliability but currently lack access to RPS funding streams and would therefore enable NJ to fully decarbonize without threatening reliability.

Enel also made its own recommendation that the Board move forward in a two-step process separating what can be implemented now and what will need further exploration. Enel proposed that Stage One prioritize creation of a governance structure for New Jersey and other voluntary states/participants capable of evolving into an ICCM in the future and establish a CCC alongside the existing RPM that would ultimately transition to the ICCM once established. Stage Two would then be the co-optimization of clean energy, transitioning to ICCM, and exploring indexing clean energy products. Enel further requested that the indexing concept be clarified.

Response: Staff appreciates Enel's focus on how best to implement the various options, and agrees that focusing on both state-led and regional efforts in parallel is necessary. Staff has

revisited the report to elaborate on how indexing would value different clean energy products.[26]

NJ Conservation Foundation ("NJCF")

Comment: NJCF supported Staff's efforts to advance clean energy and welcomed Staff's recommendation that "NJ Should Develop a Regional Voluntary CE Market," and supports any well-designed procurement market for CEACs.[27] NJCF stated that it sees potential for "Dynamic Credits" in a clean energy market that would be priced as a function of marginal displacement of fossil generation over time.

Response: Staff notes that it agrees that dynamic pricing of REC or other clean energy credits could accelerate achievement of New Jersey's decarbonization goals and that NJCF's "Dynamic Credit" concept is similar to the carbon-indexing idea laid out in the 2022Progress Report. Staff anticipates that the next phase of this proceeding will continue to explore those concepts.

Comment: NJCF expressed concern that any market solution implemented through the PJM tariff could increase the risk that New Jersey's clean energy policies could become subject to FERC oversight. NJCF further suggested that the various market designs under consideration should be part of an organized framework around a clean electricity standard or other such program which would require that a growing share of New Jersey's electricity be purchased from clean energy resources, such as 100% of retail sales to be from zero-emitting generation by 2035.

Response: Staff appreciates NJCF's comments and notes that Executive Order No. 315, recently signed by Governor Phil Murphy, establishes the type of overarching clean energy framework that NJCF supports. Staff further shares NJCF's concerns that any long-term market framework ensure that New Jersey continue to exercise jurisdiction over its own clean energy policies and not cede jurisdiction to FERC or other federal regulators. Staff notes that the 2022 Progress Report also discusses its desire to see governance changes that would address the federal-state dynamics that NJCF discusses. Staff anticipates that this will continue to be a topic of conversation in future stakeholder discussions.

Comment: NJCF expressed concern that there may be serious design flaws in the draft 2022 Progress Report's clean capacity credit proposal. Specifically, NJCF raised concerns that any additional revenues paid to clean capacity may not translate into additional investment in new clean resources. NJCF noted that, as PJM's grid transitions to predominantly clean energy, the capacity value of each additional resource will decrease, and the supply of CCCs is likely to be highly inelastic. NJCF included an affidavit from Steve Corneli, a noted market design expert, supporting NJFC's views.

Response: Staff respectfully disagrees with the overall assessment and conclusions of NJCF and their consultant. Most importantly, Staff believes that over the long-term main purpose of a clean capacity requirement is to send a forward market signal that will incentivize the very kind of "clean firm" resources that will be needed to maintain resource adequacy as the grid transitions away from thermal resources towards decarbonized generation. Further, while Staff agrees with many of NJCF predictions, particularly that the capacity value of wind, and solar will decrease over time as PJM rolls out its capacity accreditation reforms, that trend suggests an increased need for a clear price signal that incentivizes investment in high capacity-value clean resources. Indeed, the 2019 Energy Master Plan itself highlights the need for "clean-firm" resources.

[26] See updated 2022 Progress Report at 39-40.

Many of NJCF's concerns are around the potential "windfall" profits that existing clean resources may experience while new clean-firm technologies come to market. Staff agrees that this is a valid concern and agrees that any clean capacity product would have to be designed with this consideration in mind. In particular, the 2022 Progress Report discusses the potential to use an alternative compliance payment structure to prevent excess costs and Staff expects that other alternatives will be discussed in future stakeholder meetings. Further, Staff notes that the NJCF analysis appears to be predicated on several assumptions that are not foreordained, including that: 1) the only resources that will receive clean capacity revenue are those that would have cleared the PJM capacity market anyway; 2) the Board will inevitably set CCC requirements at unrealistically high levels; and 3) at some point, increases in clean capacity can cause a *decrease* in the total capacity value of all clean capacity resources and begin to have *negative* capacity value.

In regards to the first point, Staff submits that the modeling performed by Brattle, as well as independent modeling performed by PJM as part of its CAPST, show that even modest imposition of clean capacity requirements affect the supply mix, tilting the types of resources entering the market away from lower capacity-value resources and towards higher capacity-value resources. In response to the second assumption, Staff notes that its preliminary recommendation is to implement a clean capacity requirement that gradually increases over time in line with a feasible deployment timeline, with an alternative compliance payment mechanism to serve as a cost-control backstop. Regarding the third issue, Staff agrees that how PJM's capacity accreditation rules develop will necessarily influence the design of any clean capacity product and that the PJM grid will need a mix of different low- and no-carbon resources in the future.

New Jersey League of Conservation Voters ("NJ LCV")

Comment: The NJ LCV applauded the Board's response to FERC's imposition of MOPR in 2019. However, NJ LCV suggested that due to FERC's reform of the MOPR and ongoing regional efforts, that the Board should reconsider dedicating its resources to continuing this effort. Simultaneously, NJ LCV agreed that there is an inherent need to plan for the future of markets, and encourages the Board to conduct a robust stakeholder process as part of an annual report.

Response: Staff respectfully disagrees with NJ LCV that now is the time to disengage from efforts to reform PJM's markets. While, as NJ LCV notes, the hostility towards state clean energy policies has dissipated under the current federal administration, New Jersey continues to rely on capacity resources both within New Jersey, as well as those out-of-state, to maintain reliability. The types of reforms Staff advocates for are aimed at providing New Jersey consumers to signal their preference for clean energy and capacity and thus, necessarily, involves reforms to the PJM market. Further, Staff sees substantial potential for clean energy market reforms to significantly decrease the cost of supplying clean energy to meet New Jersey's demand.

DISCUSSION AND FINDINGS

The Board **HEREBY FINDS** that Staff thoroughly investigated alternative structures for resource adequacy and has provided the Board with sufficient options and information to warrant moving forward with its market design efforts.

After review of the 2022 Progress Report and all comments received at both the stakeholder meeting held October 11, 2022 and written comments submitted on or before October 25, 2022, and all updates incorporated since its preliminary release in September 2022, the Board **HEREBY**

ACCEPTS the final Progress Report and adopts Staff's findings.

Therefore, the Board **HEREBY ORDERS** Staff to continue working with stakeholders and industry experts to develop a New Jersey-led alternative voluntary regional Forward Clean Energy Market that could be implemented if regional efforts fail to adequately integrate state policy in PJM markets. Further, the Board **HEREBY DIRECTS** Staff to continue to explore other concepts introduced through the 2022 Progress Report.

Additionally, the Board **HEREBY DIRECTS** Board Staff to continue to participate in regional efforts and to advocate for regional adoption of an Integrated Clean Capacity Market, the solution option identified to provide the most cost efficiencies and emissions reduction benefits.

The effective date of this Board Order is April 19, 2023.

DATED: April 12, 2023

BOARD OF PUBLIC UTILITIES
BY:

JOSEPH L. FIORDALISO
PRESIDENT

MARY-ANNA HOLDEN
COMMISSIONER

DIANNE SOLOMON
COMMISSIONER

DR. ZENON CHRISTODOULOU
COMMISSIONER

ATTEST:

SHERRI L. GOLDEN
SECRETARY

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