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October 27, 2022

VIA ELECTRONIC MAIL
Honorable Carmen D. Diaz, Acting Secretary
NJ Board of Public Utilities
44 South Clinton Avenue, 9th Floor
P.O. Box 350
Trenton, NJ 08625-0350

Re: In the Matter of the BPU Investigation of Resource Adequacy Alternatives--Rate Counsel's Comments on the 2022 Progress Report
BPU Docket No.: EO20030203

Dear Secretary Diaz:

Please accept for filing these comments being submitted on behalf of the New Jersey Division of Rate Counsel ("Rate Counsel") in accordance with the Notice ("Notice") issued by the Board of Public Utilities ("Board") in this matter on September 22, 2022 and the time extension granted on October 21, 2022. In accordance with the Notice, these comments are being filed electronically with the Board's Secretary at board.secretary@bpu.nj.gov.

Please acknowledge receipt of these comments.

INTRODUCTION

Rate Counsel appreciates the opportunity to submit these comments following the Board's October 11, 2022 Stakeholder Meeting in this matter. As stated in the Notice, the Stakeholder Meeting was convened virtually via "webinar" in order to provide an overview of Board Staff's ("Staff's") 2022 Progress Report on New Jersey's Resource Adequacy Alternatives ("Progress Report"), and potential options for New Jersey to cost-effectively meet New Jersey's clean energy goals and maintain system reliability.

Rate Counsel is generally supportive of the recommendations that New Jersey should continue to explore and develop various options for meeting the State's clean energy and system reliability goals, with the focus being at the regional (PJM) level However, Rate Counsel believes any decision to move toward implementation of any specific option is premature at this time. In addition to the options discussed in the Progress Report (i.e. an Integrated Clean Capacity Market ("ICCM"), a Forward Clean Energy Market ("FCEM"), and Clean Capacity Credits ("CCC")), Rate Counsel believes the Board should continue to explore carbon pricing and a hybrid approach to long-term and short-term markets, as discussed below.

Rate Counsel has concerns regarding Staff's various claims and proposed findings about possible future results or outcomes of specific market design approaches. Rate Counsel believes there is no data to support Staff's findings of the efficiency or other benefits of an ICCM or FCEM. Rate Counsel has concerns that some of the modeling results rely upon a number of questionable assumptions and are highly speculative, at this time. Both an ICCM and a FCEM are complex market mechanisms requiring solutions to many challenging market design issues (discussed further below), that are yet to be implemented anywhere. Likewise, a new tracking

system and requirements to purchase CCCs warrant further consideration, but a decision to pursue implementation of any of these options would be premature at this time.

In the remainder of these comments, Rate Counsel will provide feedback on the findings and market design options and elements discussed in the Progress Report and on additional options the Board should consider.

RATE COUNSEL COMMENTS

At Page 20 of the Progress Report the Board, citing an earlier report issued in 2021 (the "2021 Report")[1] states the following general findings:

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

2. Existing PJM markets have fulfilled their design objectives to maintain reliability at competitive prices, but do not adequately include state clean energy policies.

3. Without further reform, the PJM market will continue to attract investments in new fossil fuel plants rather than clean energy resources.

4. New Jersey should continue, in parallel, to explore the option to implement a New Jersey or multi-state forward clean energy market, whether under the FRR or other state-led structure.

Rate Counsel supports the suggestion in the first point that the focus should be at the regional level, for example through PJM and its Clean Attribute Procurement Senior Task Force "CAPSTF" stakeholder process, and the Organization of PJM States, Inc., "OPSI" and its Competitive Policy Achievement Working Group, "CPAWG." However, Rate Counsel has

[1] Alternative Resource Adequacy Structures for New Jersey: Staff Report on the Investigation of Resource Adequacy Alternatives ("2021 Report"), BPU Docket No. EO20030203, issued June 2021.

substantial disagreements with the remaining findings and recommendations in the Progress Report. As explained in more detail in the comments below:

1. Rate Counsel does not support the recommendation that New Jersey should "advocate" for adoption of an ICCM at the regional level at this time, as a detailed design of an ICCM, or an example of it in operation, are lacking, so the potential impacts of such a mechanism are uncertain.

2. Rate Counsel does not support the recommendation to move forward with a voluntary FCEM while exploration of the ICCM option continues. Rate Counsel does not object to exploring options outside of PJM, however, it is not clear that New Jersey, alone or in cooperation with other states, can move substantially faster than PJM, or that options outside of PJM would be efficient and provide substantial benefits.

3. Rate Counsel is not opposed to further exploration of a potential policy requiring clean capacity purchases. However, any decision to move toward implementation of any specific option or a formal policy would be premature at this time.

4. Rate Counsel renews its earlier recommendation that the Board consider hybrid options for procurement of clean energy resources.

The above recommendations are discussed in more detail below.

DISCUSSION

Preliminarily, Rate Counsel notes that economists generally agree that carbon pricing is the most straightforward way to discourage carbon emissions and encourage development of resources that do not emit carbon.[2] If carbon pricing is ultimately implemented at the regional, national, or global level, the various other options discussed below may not be needed, or the potential benefits would be far smaller. Rate Counsel supports continued efforts to explore carbon pricing at the regional, national, and/or global level. In the absence of the implementation of carbon pricing, Rate Counsel supports the exploration of the options discussed below, but remains skeptical of the feasibility of these untested market mechanisms.

A. AUCTIONS FOR CLEAN ATTRIBUTES OF ELECTRIC GENERATION (ICCM OR FCEM)

1. Description of the ICCM and FCEM

Two of the options discussed in the Progress Report would involve auctions for Clean Energy Attribute Credits ("CEACs") associated with electric generation from renewable or other sources deemed "clean." Under the ICCM approach, the auction for CEACs would be held simultaneously with an auction for the traditional capacity service required by PJM for resource adequacy (the Reliability Pricing Model, "RPM"). Clean energy resources would offer CEACs into the ICCM, and states and other entities would offer to purchase CEACs, specifying the quantities they wished to procure and at what maximum prices.

[2] See e.g. Monitoring Analytics: Carbon Pricing in PJM (May 19, 2020); E3, Least Cost Carbon Reduction Policies in PJM (December 8, 2020).

As an alternative market construct to an ICCM, Staff proposes a FCEM. This would be a forward auction only for CEACs, entirely separate from the capacity market.[3] The FCEM auction would be held prior to the PJM-administered RPM Base Residual Auction ("BRA") for capacity, so a participating clean energy generator would offer to sell clean energy attributes before knowing what its capacity revenue will be.[4] The primary difference between the ICCM and the FCEM is that the FCEM does not co-optimize CEAC and capacity auction outcomes.[5] Staff finds that an FCEM would yield most of the benefits of an ICCM and could be implemented more quickly than an ICCM, but would be less economically efficient, since sellers in the FCEM will likely submit higher bid offers for clean energy attributes to compensate for the risk of not knowing what their capacity market revenues will be.[6]

In light of the similarity between the ICCM and FCEM, we discuss the two options together.

2. Key market design issues with the ICCM or FCEM

The actual design of the ICCM or FCEM would involve multiple challenges. The following notes a few of the market design issues that may be the most difficult and controversial.

a) Geographic scope and participating entities

While Staff believes a PJM-wide ICCM or FCEM would be most efficient, Staff notes that this likely would involve an extended PJM stakeholder process, with no guarantee of a decision to implement something, and some states might choose to not participate in any clean attribute procurement mechanism. Staff suggests that as an alternative, New Jersey, alone or in

[3] Progress Report at 14.
[4] Id. at 15.
[5] Id. at 26.
[6] Id. at 25-26.

cooperation with one or more other states, could elect the Fixed Resource Requirement ("FRR") option and incorporate clean energy policies in their capacity resource procurement mechanisms.

However, as explained in Rate Counsel's May 20, 2020 comments in this matter,[7] there would be serious legal and practical difficulties in implementing an FRR option in New Jersey. Since an FRR would be inconsistent with the structure of New Jersey's electric generation market under the Electric Discount and Energy Competition Act of 1999 ("EDECA"), N.J.S.A. 48:3-49 et seq., legislation would be needed to implement an FRR in New Jersey.[8] Substantial effort would be needed to establish the State administrative structure needed to implement this option.[9] Market power issues would also need to be addressed.[10] The State and participating load serving entities ("LSEs") would face challenges due to the complexity and inflexibility of the requirements for the FRR option.[11] Pursuing the FRR option with other states would only multiply these challenges.

b) Details of the CEAC Product

Both an ICCM and FCEM would require definition of a homogeneous CEAC product, or perhaps a few different products, that could be procured through auctions. The product design raises several challenging issues, just a few of which are mentioned in the following paragraphs.

(1) Number of products and eligibility for each

Clean energy can be provided by diverse resource types that can have very different attributes that may be important to State policymakers and affect their willingness to pay for the

[7] In the Matter of BPU Investigation of Resource Adequacy Alternatives, BPU Dkt. No. EO20030203, Rate Counsel Response to Staff Request for Written Comments (May 20, 2020) (Rate Counsel's May 2020 Comments").
[8] Rate Counsel's May 2020 Comments at 9-12.
[9] Rate Counsel's May 2020 Comments at 13-15, 32-34.
[10] Rate Counsel's May 2020 Comments at 15-18.
[11] Rate Counsel's May 20, 2020 Comments at 18-23.

resource. Onshore wind and solar in various locations implicate transmission needs and equity concerns. Offshore wind and nuclear facilities have very different qualities that may affect a State's willingness to pay for these resources. Future emerging resource types, such as energy from ocean currents or waves, would also qualify, and would likely implicate other attributes that distinguish them from other providers of CEACs.

The various differences among different resource types, and among different projects in different locations of any resource type, would not be considered in auctions that acquire a homogeneous CEAC product. Thus, in requiring a homogeneous product in order to select projects through a price-based auction, the approach necessarily ignores many externalities (the differences in attributes that are not priced).

OPSI identifies principles for clean procurement market development, including the following, among others:[12]

- PJM should consider allowing States and other buyers the option to voluntarily purchase energy that meets State policy specifications, including the ability to preference capacity from certain resource types, purchase energy attributes which satisfy State objectives, or advance other State policies, in a manner that collectively meets these preferences on a competitive, least-cost basis, consistent with reliability.
- Purchases in any expanded PJM market must be voluntary for States and other buyers, and respect existing jurisdictional boundaries.
- Any voluntary market for these products must respect and accommodate State procurements, competitive solicitations or policy choices and must allow States to continue to meet their energy policies/preferences without change to existing policies.

These principles appear to emphasize accommodating differences in various states' goals and policies, which would seem to suggest multiple clean attribute products. But if multiple

[12] Update from OPSI's Competitive Policy Achievement Working Group, presentation to PJM CAPSTF June, 2022, available at https://www.pjm.com/-/media/committees-groups/task-forces/capstf/2022/20220603/20220603-item-03-opst-education-and-perspectives.ashx.

CEAC products are defined around different resource types and/or locations or other attributes, the fragmented auctions may not be competitive, and the potential advantages of the centralized auction approach relative to state procurements for these resource types become more questionable. Also, the implementation of auctions with multiple CEAC products, capacity, varying contract durations, and/or possibly flexible products, is likely to present practical challenges. Defining multiple CEAC products to be auctioned would also group some resource types together and separate others, creating winners and losers. For these reasons, the design of the CEAC product or products would likely be difficult and controversial.

(2) Participation of Existing Clean Resources and "Additionality"

Staff recommends that New Jersey explore using "additionality" as a constraint in the State's clean energy procurement and enable any clean energy market to assist the State in ensuring that a portion of all clean RPS resources come from new (rather than existing) clean energy facilities.[13] However, any provisions that discriminate between new and existing clean resources are likely to be controversial and challenged as discriminatory.

New and existing resources will have differing cost structures and differing incentives in formulating their offer prices, and this may result in solutions within any single price auction mechanism that are inefficient and fail to clear the most valuable and cost-effective resources. If existing resources do participate in an ICCM or FCEM, there could be windfalls to such resources, such as nuclear plants, if the auctions clear at prices far above their current revenue streams. Transitional provisions (such as contracts that specify or limit the prices to be earned) may be needed to mitigate the potential consumer cost impacts of allowing existing resources to

[13] Progress Report at 33.

compete in such auction mechanisms while also allowing prices to rise high enough to attract new resources. It also unclear whether Staff has considered the current clean energy incentives and subsidies already provided by New Jersey ratepayers.

(3) Possibility of Multi-Year Price Commitments

Staff recommends that the Board incorporate a "price lock" for a period of 7 to 12 years to guarantee developers a price at which it can sell its clean energy attributes.[14]

With regard to a price locks for new resources, Rate Counsel notes that FERC has rejected such provisions in PJM as discriminatory,[15] and has recently ordered ISO New England to remove such a provision from its tariff that FERC had earlier approved.[16] Thus, Rate Counsel questions whether stakeholders, PJM, and FERC would support such a provision.

Moreover, such price lock commitments to resources would require a demand side for such multi-year commitments (e.g., qualified buyers indicating a willingness and ability to commit to future quantities at fixed prices) in order for such price locks to be cleared in the auction. It is unclear whether many buyers would have the willingness and sufficient credit to make such commitments. If price locks are implemented, this would involve substantial complexity in the auctions, and could ultimately result in little or no volume committed at multi-year prices.

In light of these issues, Rate Counsel questions whether any multi-year price lock would be designed, approved, implemented, and successful in helping to attract new clean resources.

[14] Id. at 32.
[15] PJM Interconnection, L.L.C., 128 FERC ¶ 61,157 (2009).
[16] ISO New England Inc., 173 FERC ¶ 61,198 (2020).

(4) Possibility of recognizing carbon abatement

The Progress Report refers to the likely adoption of the "dynamic" aspect where differences in marginal carbon abatement of resources of different types and locations are recognized in the CEAC product definition and associated resource accreditation.[17]

Rate Counsel agrees that this would likely be a necessary feature of an ICCM or FCEM. Different types of clean energy resources may have substantially different marginal carbon abatement values, especially in future years.[18] Some candidate corporate voluntary buyers already procure clean resources taking into account how much different types of resource can be expected to reduce emissions. However, this would also be complex to design and controversial, as the manner in which abatement is recognized in accreditation would create winners and losers.

c) Participation of Sellers and Buyers

Perhaps of greatest concern is the possibility (and perhaps likelihood) that, if an ICCM or FCEM proposal can be designed and implemented, buyers and sellers might not find much common ground and the auctions might not clear very many clean resources.

Offers to sell and buy CEACs would be voluntary. Buyers (the state, and/or load-serving entities pursuing state policy) would submit sloped price-quantity "demand curves" to acquire CEACs of one or more type. However, if the auctions do not meet state targets, New Jersey and

[17] ICCM Presentation slide 24 ("Consider: CEAC accreditation tied to carbon abatement value"); see also The Brattle Group, *How States, Cities and Customers Can Harness Competitive Markets to Meet Ambitious Carbon Goals*, prepared for NRG, September 2019 ("FCEM-2019"), pp. 34-38 section H.1 (recommending "Dynamic" Clean Energy Attribute Credits Awarded in Proportion to Delivered Carbon Abatement"), available at https://www.brattle.com/news-and-knowledge/publications/how-states-cities-and-customers-can-harness-competitive-markets-to-meet-ambitious-carbon-goals-through-a-forward-market-for-clean-energy-attributes-expanded-report.

[18] SOURCE here seems helpful

its Electric Distribution Companies ("EDCs") always have the option to pursue additional procurements of zero carbon resources. The prices the State would likely pay in such procurements, which may offer 20-year Power Purchase Agreements ("PPAs"), should serve as an "opportunity cost" that should guide the formation of the CEAC offer demand curves. That is, the EDCs should not offer to pay much higher prices in an ICCM or FCEM than they would expect to pay through a procurement, because that would be contrary to the interests of their customers.

Rate Counsel also notes that within procurements, unlike under auction mechanisms, the State and EDC buyers can select resources taking into account a broad range of attributes of each available resource, including specific location, resource type, sponsoring organization, and power purchase agreement structure and duration, among many other characteristics. This could lead to greater value than the anonymous resources selected through an auction based only on price bids, and this value should be taken into account in forming offers into an auction mechanism.

On the supply side, sellers would be offering to provide CEACs (or perhaps integrated offers for CEACs and RPM capacity) on a one-year basis (or potentially for a 7- or 12-year price lock, however, as explained above, we are skeptical about the multi-year feature). Staff notes that clean resources tend to have high up-front capital costs and that upfront costs are "the main financial hurdle for developers."[19] Sellers would also receive energy and ancillary services revenues; however, these would be highly uncertain and may be heavily discounted in forming offers. Accordingly, sellers might seek to recover nearly all of their construction costs over a

[19] Progress Report at 26.

short period through the auctions. This could lead to substantially higher offer prices than new clean resources would seek in a procurement that offers a 20-year PPA. If this is the case (sellers offer at prices above 20-year PPA prices, while buyers are unwilling to pay much more than 20-year PPA prices), the auction supply and demand curves could clear very low quantities that fail to meet state goals and leave both buyers and sellers pursuing their fallback options.

The Progress Report is silent on the potential differences in value between an auction purchase or sale and a long-term contract through a procurement or bilateral negotiation. The Progress Report refers to "friction costs" associated with bilateral transactions, but it is unclear what these costs are made up of, who incurs them, and how they are quantified.

If the EDC buyers will be required to acquire certain quantities of CEACs at prices above reasonable estimates of the opportunity costs likely available through procurements, this could lead to unnecessary extra cost to consumers. The maximum prices the EDCs will offer to purchase CEACs could be an important and controversial parameter in these mechanisms. As possible EDC demand curves and their maximum prices for an ICCM or FCEM are further discussed, Rate Counsel suggests that the amount by which these demand curves could clear above the estimated opportunity cost of clean energy through a traditional procurement, and the estimated cost to consumers, be transparent.

As a final comment on the ICCM or FCEM concept, we note that such a mechanism would only be a partial solution to changing resource adequacy needs. The ICCM mechanism could potentially be enhanced to address additional resource adequacy needs such as adequate flexible resources to integrate large amounts of renewables, or fuel security, however, the details of such changes are not part of the proposal at this time. Staff should also consider any changes on the current incentives received by these resources.

B. CLEAN CAPACITY CREDITS (CCC)

In addition to the ICCM and FCEM proposals discussed above for the procurement of the clean energy attributes of electric energy generation, Staff also proposes that the State implement policies to favor procurement of capacity from clean resources.[20] Staff finds that establishing a clean capacity procurement mechanism could decrease the percentage of PJM load being served by fossil resources and increase the percentage of load served by clean energy resources.[21]

Staff recommends that New Jersey adopt a formal policy requirement for purchasing capacity from clean resources over capacity procured from fossil fuel resources.[22] To implement this policy, Staff recommends the Board sponsor the creation of a new tracking system for Clean Capacity Credits ("CCCs").[23] Participating LSEs would be required to purchase CCCs, either bilaterally or through an existing or future capacity construct that accommodates demand for the CCCs, and then retire them in proportion to their load obligations. Requirements for CCCs could be locational, for example, there could be a constraint specific to the "EMAAC" zone within PJM that includes New Jersey.[24]

Staff also recommends that the Board offer an Alternative Compliance Payment option for LSEs that fail to acquire the required minimum quantity of CCCs, to ensure that clean capacity does not unduly increase prices.[25] Staff also recommends the Board consider indexing CCCs so the State can quantify carbon emissions abatement.[26]

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[20] Id. at 38.
[21] Id. at 38.
[22] Ibid.
[23] Id. at 42.
[24] Id. at 43.
[25] Ibid.
[26] Ibid.

Regarding Staff's CCC proposal, Rate Counsel observes that it could be implemented with or (perhaps more likely) without an ICCM or FCEM. Rate Counsel also observes that this proposal could potentially be simpler to design and reach agreement for than an ICCM or FCEM, and this approach could potentially achieve a considerable fraction of the potential benefits. While not currently ready for implementation, Rate Counsel supports further exploration of this option.

C. HYBRID MARKET DESIGN APPROACHES

As noted above, Rate Counsel supports further exploring available options. This includes "hybrid" approaches, in which there is an organized long-term market to procure additions to the resource mix under long-term contracts (including new clean energy resources, flexible resources, and other needed additions), while the short-term energy and ancillary services markets continue to evolve to accommodate the increased penetration of variable renewable energy resources.[27] Rate Counsel's prior Comments in this matter, submitted on March 5, 2021, suggested the Board explore such an option, but the Progress Report fails to mention it.

Rate Counsel requests and recommends that Staff research and analyze hybrid options, and compare them to the ICCM and other approaches discussed in the Progress Report.

[27] Rate Counsel Comments, BPU Dkt. No. EO20030203, dated March 5, 2021, at p. 8 (citing presentation of Paul Joskow at the December 16-17, 2020 virtual workshop on "Market Design for the Clean Energy Transition: Advancing Long-Term Approaches, available at: https://www.rff.org/documents/2774/joskow_rff_presentation-12-16.pdf. Other presentations and papers from the workshop are available at: https://www.rff.org/events/workshops/market-design-for-the-clean-energy-transition-advancing-long-term-approaches/).

CONCLUSION

For the foregoing reasons, Rate Counsel supports further exploration of a range of options and believes it would be premature to move toward implementation of any of the options at this time.

Respectfully submitted,

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