



INDEPENDENT ENERGY PRODUCERS OF NEW JERSEY

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**Investigation of Resource Adequacy Alternatives
Comments on behalf of the Independent Energy Producers of New Jersey
Docket No. EO20030203**

Introduction

The Independent Energy Producers of New Jersey (IEPNJ) appreciate the opportunity to submit these comments on the New Jersey Board of Public Utilities' (NJBPU or the Board) proceeding to investigate resource adequacy alternatives.

The IEPNJ is a not-for-profit trade association representing New Jersey's electric power suppliers, which also participate in the region's wholesale power market operated by PJM Interconnection L.L.C. (PJM). Since 1992, IEPNJ has been at the forefront of efforts to transition New Jersey to a cleaner and more reliable generation fleet. Our members have consistently supported policies, such as New Jersey's recent return to the Regional Greenhouse Gas Initiative (RGGI), that advance the state's clean energy and environmental objectives while assuring that suppliers can continue providing cost-effective energy to supply customers' demand.

The IEPNJ respectfully offers the following comments in relation to the NJBPU's Investigation of Resource Adequacy Alternatives which attempt to achieve the following objectives:

1. Provide a thorough yet succinct presentation of the alternatives available to the NJBPU relative to the questions posed in the March 27, 2020 NJBPU Notice (Notice) establishing this proceeding, and;
2. Explore these potential alternatives to help guide any NJBPU determinations or recommendations that may arise from this matter.

These comments reflect IEPNJ's diverse membership with varied market interests by offering objective information and an impartial assessment of the potential impacts of the resource adequacy options outlined in the Notice related to this proceeding.

As the NJBPU is well aware, the Federal Energy Regulatory Commission's (FERC) December 2019 decision significantly reshapes the PJM capacity market in a manner which *potentially* could impact New Jersey's goal of transitioning to 100% clean energy by 2050. IEPNJ believes it is paramount that any potential alternative resource adequacy strategy is carefully evaluated before implementation and is built upon a competitive framework that continues to allow New Jersey suppliers to advance

the state's clean energy goals at a low cost to consumers. Our specific areas of discussion in these comments are summarized as follows:

- The FERC decision to mitigate certain resources' sell offer prices into the capacity market through the Minimum Offer Price Rule (MOPR) does impact resources that advance the state's clean energy goals and could raise costs to New Jersey consumers. However, the long-term impact to the state's policy goals and cost to consumers is not yet fully understood. Other potential resource adequacy strategies may be more expensive or have little effect on the state's ability to achieve its energy policy goals.
- MOPR more acutely impacts some resources more than others. For example, analysis performed by PJM and the Independent Market Monitor (IMM) suggests that MOPR likely prevents offshore wind from clearing in the capacity market, but not other clean energy resources like existing nuclear facilities, solar PV, and energy efficiency.¹ This may change in the future and the NJBPU's determinations should be mindful of this possibility. Additionally, storage resources would not clear under MOPR, however, storage resources are not significant participants in PJM's capacity markets due to PJM's ten hour minimum capability restriction, which most storage units cannot meet.
- MOPR can prevent some resources from supplying the state's capacity needs. Some alternative constructs that can directly mitigate MOPR may also erode the cost-efficiencies and investor innovation that is created by competition among suppliers. The direct impact of MOPR on resources that support the state's policy goals as well as the collateral consequences to the state's competitive retail market are equally important considerations.
- PJM's Fixed Resource Requirement (FRR) alternative is a potential avenue for the state to more directly manage resource adequacy and the achievement of its policy goals. Other subsidiary approaches include a Clean Energy Standard, a Clean Energy Market, carbon pricing, and other options which may evolve. Each approach has potential limitations that must be carefully evaluated to determine how effectively they: (i) address the downside of MOPR; (ii) minimize the financial impact to ratepayers, (iii) impact the attainment of New Jersey's goals; and (iv) maintain the state's commitment to competitive markets and to the positive Basic Generation Service (BGS) design that has served New Jersey well for almost two decades.
- New Jersey's BGS construct is a tested competitive procurement construct that has consistently provided New Jersey ratepayers with reliable, low cost energy supply for close to two decades. The NJBPU should ensure that any state-specific resource adequacy construct does not unreasonably disrupt the competitive structure in the BGS auctions.

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https://www.monitoringanalytics.com/reports/Presentations/2020/IMM_MIC_Special_Special_Session_CONE_and_ACR_Values_20200128.pdf

IEPNJ Comments

A. Resource Adequacy Today

PJM is currently responsible for ensuring resource adequacy within its territory, which includes New Jersey. It accomplishes this objective by procuring capacity through a competitive auction construct called the Reliability Pricing Model (RPM). The capacity product represents a commitment from suppliers to make their energy available to PJM throughout a future Delivery Year in exchange for payment from consumers.

PJM calculates the value of capacity by “stacking” sealed bids from every eligible supplier in economic merit order until this supply stack intercepts a demand curve representing the region’s reliability need. The auction clearing price is set by the sell offer from the last resource where these supply and demand curves meet and is paid to all lower-priced suppliers. Resources that offered above this level do not receive capacity payments. The risk of not clearing the auction – and therefore not receiving capacity revenues – creates a powerful incentive for suppliers to offer at the lowest price possible.

B. The Minimum Offer Price Rule (MOPR)

RPM has always included some type of MOPR mechanism to mitigate anti-competitive buyer-side behavior from distorting capacity prices. In theory, buyers could subsidize an uneconomic resource to enter the capacity market solely to displace the marginal resource and lower their capacity costs. While MOPR mitigation initially targeted uneconomic new gas unit entry, FERC recently found that state subsidies to all resources, in any form could have this same effect.

On December 19, 2019, FERC found RPM unjust and unreasonable and directed PJM to mitigate capacity market sell offers from any resource that is eligible to receive a “State Subsidy” through MOPR.² FERC also required PJM to adopt a very broad definition of “State Subsidies” that trigger MOPR, which includes any financial benefit that a state makes available to capacity suppliers including Renewable Energy Certificates (RECs) and Zero Emission Credits (ZECs). Resources that are unwilling to forego a state subsidy in exchange for a Competitive Exemption from MOPR cannot offer to sell capacity below a default or unit-specific price floor approved by PJM in consultation with the Independent Market Monitor (IMM).

² A direct or indirect payment, concession, rebate, subsidy, non-bypassable consumer charge, or other financial benefit that is (1) a result of any action, mandated process, or sponsored process of a state government, a political subdivision or agency of a state, or an electric cooperative formed pursuant to state law, and that (2) is derived from or connected to the procurement of (a) electricity or electric generation capacity sold at wholesale in interstate commerce, or (b) an attribute of the generation process for electricity or electric generation capacity sold at wholesale in interstate commerce, or (3) will support the construction, development, or operation of a new or existing capacity resource, or (4) could have the effect of allowing a resource to clear in any PJM capacity auction.

C. MOPR's Impact Varies Significantly Among Different Clean Energy Sources

MOPR does not expressly exclude certain resources from entering PJM's capacity market. It is a series of formulas used to calculate the lowest price that a mitigated resource can offer to sell capacity to PJM at what is determined to be a "competitive price" for that resource. That price depends both on the underlying methodology used for the calculations and on key drivers such as asset build costs, investor return expectations, and energy and ancillary revenue expectations. An asset's MOPR price floor depends heavily on how these key drivers are calibrated. Resources with higher build costs or lower energy revenues will have higher MOPR floor prices and therefore are less likely to clear in a future capacity auction.

MOPR's impact on a generator's ability to clear an RPM auction – and thus the tag-along effect on New Jersey's energy policies and consumers' costs – varies widely depending on the asset type. For example, as a result of differences in PJM's MOPR calculation methodology, the floor price calculated by PJM for a new offshore wind project that has yet to clear a capacity auction is nearly \$3,150 per MW-day. Likewise, a new storage asset would have a floor price of over \$1,050 per MW-day in the New Jersey zones. However, the floor prices for all renewable resources drops to \$0.00 per MW-day after these resources clear their first auction, and are considered "existing".³

Recent analysis presented to PJM stakeholders suggests that new onshore wind and solar resources may be able to calculate unit-specific MOPR prices below PJM's default values, making them more likely to clear in a future auction. However, these estimates depend on FERC approving PJM's proposed rules (currently pending at FERC) that allow resource owners to justify key drivers of lower MOPR prices, such as federal tax equity investment incentives, longer asset lives, and lower capital expenses. The NJBPU will be able to confirm these estimates when FERC issues its Order on PJM's MOPR Compliance Filing, which is expected sometime later this year. Therefore, the NJBPU's evaluation of the potential negative consequences of MOPR, including the cost to consumers, depends on the state's clean energy resource mix and must be carefully evaluated, taking into account the FERC's pending decision on PJM's Compliance Filing.

The various alternatives to address MOPR impacts that are identified in the Board's Notice are addressed in the following sections.

D. The FRR Alternative is One Mechanism for the State to Manage Local Resource Adequacy and Fulfill the State's Clean Energy Goals: Its Impacts to Consumer Costs, Competitive Local and Regional Power Markets, and New Jersey's Energy Policy Goals Continue to be Reviewed and is Heavily Dependent on Program Implementation

³ <https://www.pjm.com/directory/etariff/FercDockets/4443/20200318-er18-1314-003.pdf>

The FRR alternative has been in existence as part of PJM's capacity construct since RPM was first implemented nearly fifteen years ago. It allows a single Electric Distribution Company (EDC) to supply the entire capacity obligation for every customer within that utility service territory. The capacity resources and corresponding load obligation are both removed from the capacity supply and demand stacks, thereby shrinking the remaining RPM market. PJM does not credit revenues or levy charges for capacity on the resources or captive customers. Instead, the state would be required to establish an alternative capacity payment structure.

While the FRR could be exercised in either regulated or retail choice states, it may have limitations that require careful consideration by New Jersey, as discussed more fully below.

i. Transmission Limitations Would Need to be Recognized if the NJBPU Decided to Implement FRR

New Jersey's dense population, coupled with its location along the Atlantic coast, makes it one of the most geographically and electrically constrained areas in the country. An FRR Load Serving Entity (LSE) will still need to respect the limits of the transmission system by sourcing a minimum amount of capacity from within each constrained area in New Jersey.

The actual amount of capacity that makes up the actual FRR of an LSE's Internal Resource Requirement will depend on a variety of factors including forecasted peak load and reserve margins, as well as transmission limitations called Capacity Emergency Transfer Limits (CETL), which reflects the relative import capability to meet reliability requirements in each utility territory. While these factors vary over time, the IMM recently published analysis suggesting that New Jersey as a whole lacked sufficient local capacity to meet the estimated internal capacity obligation.⁴ This implies the state would have to utilize the available transfer capability to rely on resources beyond New Jersey to fulfill its capacity obligations (as they do today under RPM).

As the IMM pointed out in its analysis, these statistics are relevant to a statewide FRR construct. The requirements will be different if the state were to consider specific EDCs and not a full New Jersey FRR. It is also worth noting that these limitations will change over time as the PJM system evolves. Any FRR structure the state considers should evaluate these considerations as New Jersey strives to satisfy its long-term clean energy objectives.

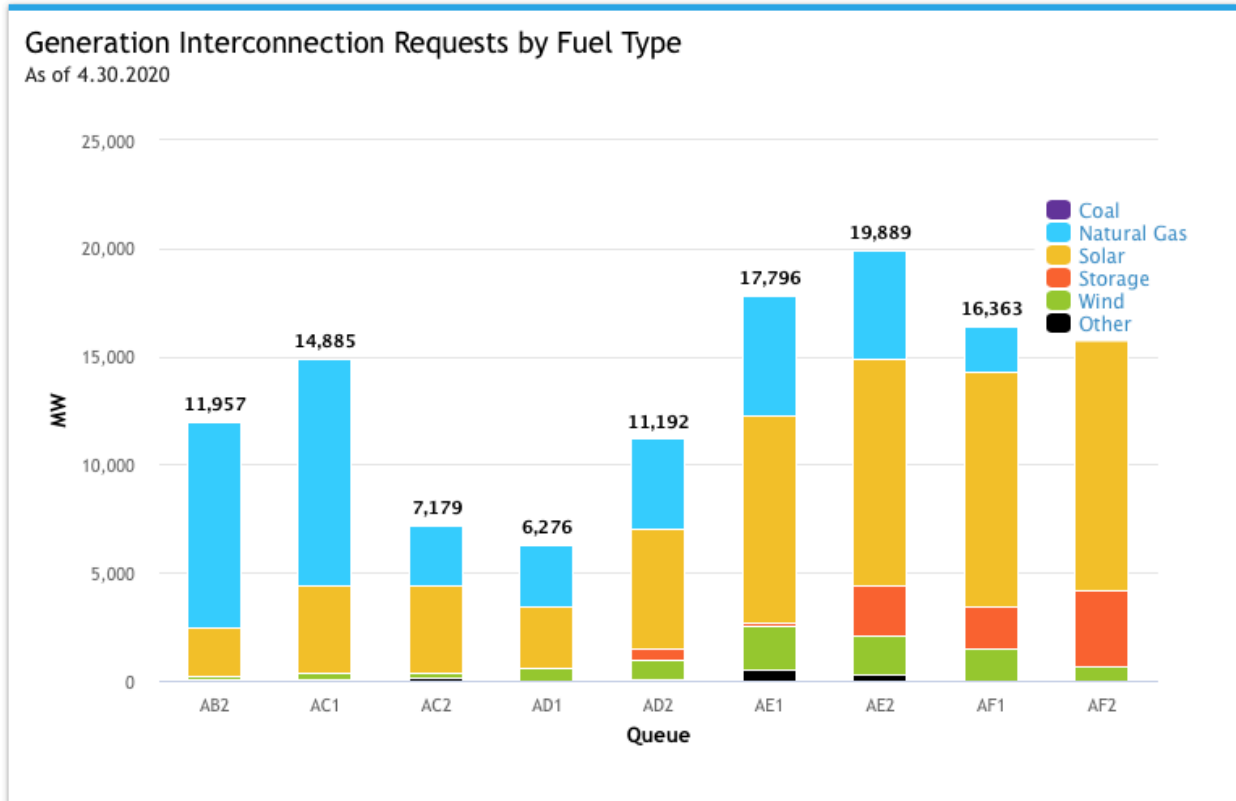
A second but potentially equally important consideration would be what type of resources would make up the resource mix secured through the FRR plan.

The BPU should evaluate all of these issues as it considers how FRR would impact the dynamics of New Jersey's planned evolution to a carbon free future.

⁴http://www.monitoringanalytics.com/reports/Reports/2020/IMM_Potential_Impacts_of_the_Creation_of_New_Jersey_FRRS_20200513.pdf

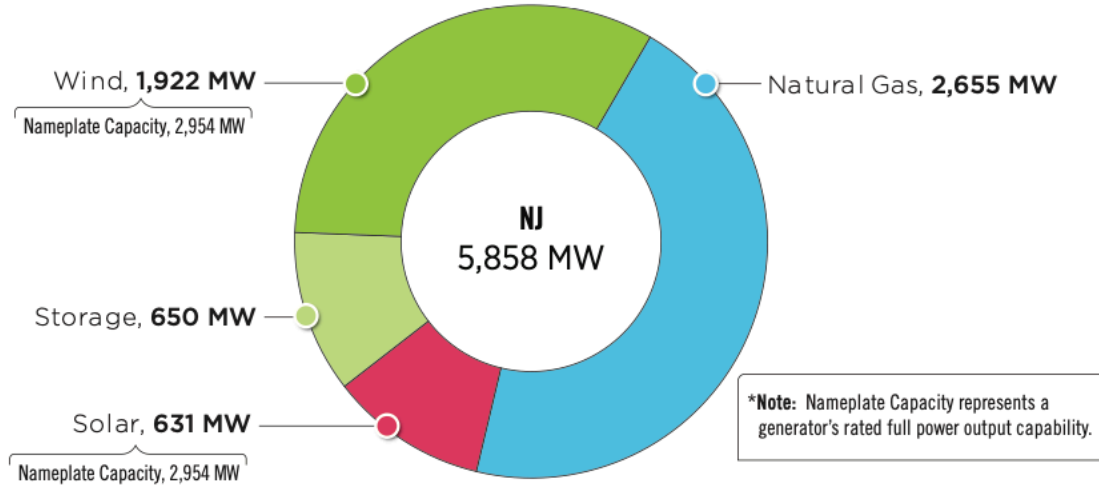
ii. **While the FRR Alternative Could Give the State More Direct Management of Local Resource Adequacy Planning, its Impact on the Clean Energy Transition Already Underway in PJM and New Jersey Should Be Considered**

PJM’s resource mix is rapidly transitioning away from fossil fuels and towards the renewable resources that help achieve the state’s clean energy objectives. As shown in the chart below, natural gas generation interconnection requests are being rapidly replaced by planned renewable and storage sources.



New Jersey specific interconnection requests tell the same story, with most of the future capacity expected to come from clean energy sources.

Figure 6.34: New Jersey – Queued Capacity (MW) by Fuel Type (Dec. 31, 2019)

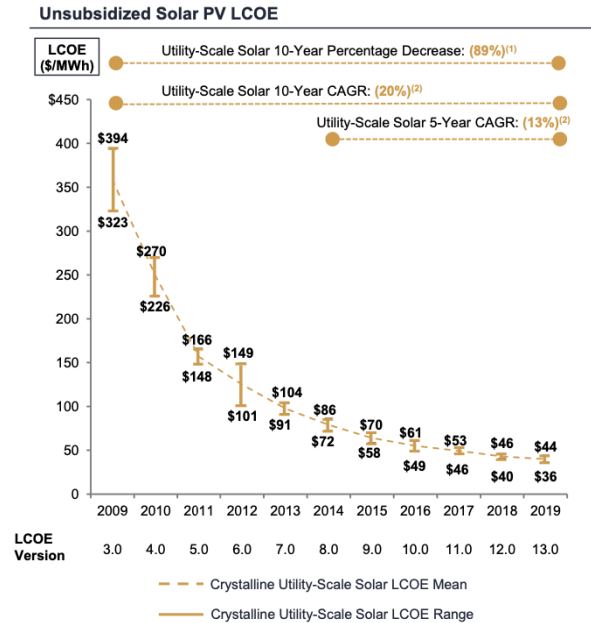
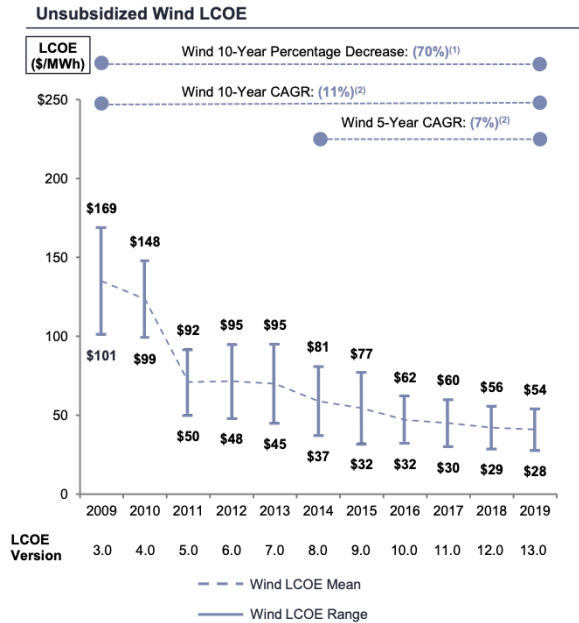


The FRR provides the state with more direct control over which of these resources are ultimately developed to meet the state's capacity and policy obligations. The FRR election is binding for no less than five consecutive years, meaning that the EDCs will be required to create FRR capacity plans⁵ that will serve the stated entire capacity obligation during that period. With these longer dated plans, any design would need to recognize the current market trends and be carefully aligned with the state objectives laid out in the EMP.

In addition, we expect that the NJBPU would likely need to establish the FRR alternative capacity compensation mechanism to provide potential bidders with some degree of revenue certainty before suppliers "opt-out" of the capacity market. However, the cost to develop new clean energy resources, such as renewables and battery storage, have rapidly declined over the recent past as shown in the charts below. This trend is expected to continue on into the future as these technologies continue to mature.⁶

⁵ These capacity plans are submitted each year under the FRR construct and can change year to year.

⁶ <https://www.lazard.com/perspective/lcoe2019>



As with any type of long-term commitment process, the state must consider how to effectively balance changing technologies and costs with the ultimate objective of improving the overall air quality of New Jersey and achieving the goals established through the EMP.

E. If FRR is Implemented through BGS, the Most Effective and Beneficial Features of the BGS Should be Maintained

The New Jersey BGS auction provides default service to customers that do not choose a third-party supplier. The BGS-RSCP auction procures energy for residential and smaller commercial customers, while the BGS-CIEP auction serves larger commercial and industrial customers. The BGS auction procures electricity on a staggered three-year rolling procurement process, where the full requirement BGS load for each New Jersey electric utility is one-third of the three-year total in each annual auction. The BGS-RSCP rates for the energy year are determined as a tranche-weighted average of winning bids for the three-year period, i.e., the current year award combined with the supply contracts previously secured.

To implement an FRR plan, the NJBPU may need to consider changes to the timing and structure of the BGS auctions. If an FRR plan is implemented before the PJM RPM schedule is returned to its normal state, there may be periods where the capacity price is not known to BGS suppliers. The BPU has successfully dealt with this issue in the most recent auction, but with an FRR plan, there may be more uncertainty surrounding those costs and obligations. Those should be evaluated, controlled, and communicated to potential suppliers prior to any BGS auction that may be impacted to ensure customers do not pay additional risk premiums associated with uncertainty.

In place since 2002, the BGS auction structure has provided price stability to consumers as BGS suppliers are incented through the BGS competitive process to manage risk and offer firm three-year prices. As a result, recognizing that the BGS construct has been a successful approach protecting ratepayers for almost two decades, in the event changes are implemented, the NJBPU should strive to maintain the most effective features of the BGS, which has been designed to foster retail competition and mitigate market volatility, with built-in protections for ratepayers. Given these benefits, it should be a goal for the NJBPU to assure any proven and beneficial aspects of BGS remain intact.

Potential Alternatives to FRR

Under current PJM rules and the recent FERC order, the options for meeting reliability requirements are limited to participating in the RPM capacity market or implementing an FRR. Both of these options present challenges and limitations. There are potential longer-term solutions that could be explored as described below. It should be noted in the absence of FERC changing its rules, however, that any of these approaches would have to fit within either the RPM capacity market or an FRR.

F. Competitive Clean Capacity Market Alternative

The state could consider working with PJM to develop an alternative to the existing capacity construct that better facilitates the state's clean energy objectives. While doing so does cede some level of direct control over the state's resource mix to market forces, it could leverage the efficiencies available from PJM's existing market infrastructure. It could also leverage the cost efficiencies created by a large vibrant competitive market construct.

In response to FERC's MOPR decision, PJM executives have indicated that the current market design does not represent a durable long-term solution and expressed a strong desire to work with states and other stakeholders to reshape the construct in a way that better supports state policies. A clean energy capacity market concept is one such approach that the NJBPU could consider exploring in lieu of FRR.

The concept would build on the Competitive Carve-Out approach to capacity procurement that the Organization of PJM States, Inc. first proposed in 2018.⁷ First, the states would coordinate with PJM to structure a capacity procurement that was open to any resource in the PJM footprint that could satisfy the states' energy policy objectives. The only criteria, other than meeting the state energy goals, would be that the procurement would be open to all eligible resources within the footprint. PJM could administer a region-wide competitive procurement to secure capacity from the resources needed to meet the state's policy objectives.

⁷ <https://www.pjm.com/-/media/about-pjm/who-we-are/public-disclosures/20180928-opsi-letter-regarding-ferc-order-capacity-mkt-rules.ashx?la=en>.

Next, PJM could run a competitive auction similar to today's RPM design to secure capacity commitments from any remaining resources needed to satisfy the region's remaining reliability requirement. While state policy objectives are elevated under this paradigm, it will remain important to ensure that the region's resource mix continues to provide the grid services necessary to maintain reliability. In this way, it balances the state's policy goals with the evolving system needs in a manner that promotes state energy policies, while fostering investors' creativity, maximizing investor potential, and minimizing the financial risk to New Jersey customers through a competitive regional construct.

The primary drawbacks to this approach is that the clean resources are still subject to the MOPR, and an FRR construct is still required to recognize the capacity value from these resources. Further, by doing a fully market-based procurement the state could derive some cost benefits, but would not have the ability to designate which resources satisfied the obligation, potentially leaving higher priced resources the state currently desires out of their plan.

G. Using a Clean Energy BGS Portfolio Manager to Advance New Jersey's Clean Energy Goals

New Jersey could consider changes to the BGS process and BGS requirements in the effort to realize its clean energy goals. Changes with the BGS construct procurement mechanism could include designating select tranches that require suppliers to meet certain clean energy emissions standards as gating criteria. The tenor of these tranches can be calibrated relative to the conventional BGS products as experience with the new paradigm increases confidence in the overall market design. An FRR approach may be required to implement this option.

This concept was considered by the NJBPU in 2010. At that time, Rate Counsel proposed implementing a Portfolio Manager with the authority to manage long term contracts and negotiate supply contracts with individual generators at potentially lower rates. In their comments related to BGS for the period beginning June 1, 2011, Rate Counsel explained "This procurement would serve as a complement to the current Auction procurement process...long term contracts for renewable generation resources might provide the least cost solution to meeting the State's Renewable Portfolio Standard ("RPS") requirements. Including renewable energy in a portfolio approach would have the added benefit of not only reducing energy price volatility, but also potentially lowering the overall cost of renewable resources."⁸ New Jersey's utilities opposed the construct at the time, arguing that the BGS process presented cost advantages through the descending clock auction structure and three year contract term which awards BGS supply to bidders that manage and reduce costs. The proposal was not adopted.

While previous investigations have considered instituting a BGS Portfolio Manager that would seek to optimize supply agreements in the markets, the NJBPU should cautiously review this approach. First, it would also constitute a form of subsidy, and would require another mechanism, like an FRR to recognize the capacity benefits of the procurement. Second, the strategy assumes that the

⁸ <https://www.nj.gov/bpu/pdf/energy/bgs/2011%20Order%20Approving%20BGS%20Auction.pdf>

Portfolio Manager will be able to assemble a range of managed contracts that create material value relative to what competitive bidders could otherwise offer and achieve. As an analogy, the concept is akin to betting that a single athlete (in this case the auction manager) is likely to consistently beat the rest of the players on the field. IEPNJ continues to believe that a vibrant competitive market maximizes the opportunity for the BGS auction construct to maximize the benefits to consumers. We suggest that the NJBPU carefully consider whether the same or better results could be achieved by setting specific clean-energy criteria in the bid specification provided to all bidders.

H. Clean Energy Certificates Under a Clean Energy Standard

The Clean Energy Standard (CES) is another policy option for the Board to consider for accelerating the penetration of clean generation in a region, potentially beyond an existing RPS. The CES also utilizes the creation of credits and establishes a market price for those credits to create an incentive for generating carbon-free energy. In contrast to RPS requirements, CES is generally not tied to specific technology types, and could be fulfilled by any resource that could meet a carbon standard, including coal or natural gas with carbon capture. As with the RPS, the creation and trading of certificates establishes a market price to meet the standard. The CES would also be another form of state subsidy that would subject resources the MOPR, leaving the state to address the capacity shortfall issues that have been discussed for other alternatives and programs.

The NJBPU could implement its CES within the BGS competitive process as an additional mechanism to meet New Jersey's long-term clean energy goals. Similar to the existing RPS component of the BGS, New Jersey could further require competitive retail providers to fulfill a clean energy mandate.

Clean Energy Certificates would be accrued on a resource neutral basis for every megawatt-hour (MWh) of carbon-free generation produced. In the BGS auction, suppliers could be required to procure certificates as a proportional share of load in accordance with the clean energy mandate. For example, if there is a 30% clean energy requirement, each provider would procure 0.3 certificates for every MWh of retail load awarded.

In combination with a forward clean energy market, wholesale suppliers could manage their portfolios on a forward basis or passively through the market. Certificates could be employed along with REC tiers and technology specific carve-outs. The compliance cost for certificates would not be defined by a specific predetermined price, but would be determined for each supplier using a downward sloping demand curve representing the CES in the auction.

At a high level, clean energy certificates may be a mechanism that can be integrated with market structures and other renewable requirements to incentivize carbon-reduction. However, if New Jersey sought to create a clean certificate product that is directly tied to specific resource types as specified within Energy Master Plan (EMP) goals, that would require a much more complicated structure within the procedures for generation of clean energy certificates to encourage generation replacement in line with policy goals. An important consideration is that the successful BGS process should not be "weighed down" with highly complex designs and difficult to hedge products that would increase costs ultimately borne by ratepayers. Further, while a CES product could be implemented on the state level, the overall impact of carbon reduction is likely much greater if implemented within a larger regional structure similar to RGGI or within the larger PJM market.

I. Carbon Pricing

New Jersey could explore a carbon pricing mechanism as an additional tool to accelerate the transition to a cleaner energy mix. Carbon pricing traditionally refers to levying a charge (or shadow price) on carbon emissions on a per unit of output basis. In this way, carbon pricing lends itself to the energy market, which measures output on a MWh basis as opposed to the capacity market, which procures on a MW basis. For example, a resource with a capacity commitment may run almost 24/7 annually or maybe a peaking unit that only turns on several times a year. Therefore, imposing a carbon price (or imposing carbon considerations) in the capacity market may not reflect actual conditions and emissions and is unlikely to result in an efficient outcome that minimizes cost and total emissions.

In the energy market, New Jersey could set a dollar per metric ton price on carbon and work with PJM to run its dispatch algorithm to dispatch generation for New Jersey load based on the emissions rate of each resource as well as its other variable operating and fuel costs. The value of this charge will be determined by the NJBPU to represent the cost of the negative externality of emitting carbon and could range from the lower RGGI prices at around \$5 per ton to the social cost of carbon at above \$50 per ton. In theory, the additional cost of producing carbon should be reflected in the resource's energy bid, which would cause those higher carbon-emitting resources to be called on less frequently through economic dispatch. Such a mechanism should be able co-exist with RGGI. "Hard-wiring" the cost of carbon into dispatch would promote clean energy development in a direct manner through energy price signals.

PJM is currently evaluating this approach, though PJM would ultimately take direction from a State or States and would not be setting carbon policy on its own, and the IEPNJ recommends that the Board support this effort.

J. Conclusion

The NJBPU should carefully consider and weigh the tradeoffs of each of the options under consideration.

Given that the alternatives are complex, it is imperative that the Board consider short and long term implications before determining a path forward. The Board's evaluation should consider the cross-cutting impacts to New Jersey's ratepayers, clean energy goals, competition, the BGS process, and reliability, while also recognizing the fluid nature of FERC and PJM policy and tariffs.

The IEPNJ looks forward to continuing to be an informational resource as New Jersey looks to evaluate approaches that ensure resource adequacy and reliability while it pursues its clean energy goals.