

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

PJM Interconnection, L.L.C.	)	
	)	Docket No. ER24-99-000
	)	

**ANSWER AND MOTION FOR LEAVE TO ANSWER  
OF THE INDEPENDENT MARKET MONITOR FOR PJM**

Pursuant to Rules 212 and 213 of the Commission’s Rules and Regulations,<sup>1</sup> Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor (“Market Monitor”) for PJM Interconnection, L.L.C. (“PJM”),<sup>2</sup> submits this answer, and moves for leave to answer, to the answer filed in the this proceeding by PJM on January 12, 2024 (“PJM Answer”), to the comments and protests filed in response to PJM’s December 8, 2023 response (“PJM Response”) to the deficiency letter in this proceeding issued November 17, 2023 (“Deficiency Letter”). This pleading also responds to and supports the motion to lodge filed in this proceeding by LS Power Development, LCC, on January 18, 2024 (“LS Power Motion”).

This answer should be accepted in order to avoid confusion, ensure a complete record and to facilitate the decision making process.

PJM’s filing in Docket No. ER24-99 should be rejected because it has not been shown to be just and reasonable and not unduly discriminatory.

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<sup>1</sup> 18 CFR §§ 385.212 & 385.213 (2023).

<sup>2</sup> Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff (“OATT”), the PJM Operating Agreement (“OA”) or the PJM Reliability Assurance Agreement (“RAA”).

## I. ANSWER

### A. The Commission Should Reject PJM's Filing.

PJM asserts (at 2–3) that its proposed accreditation provisions are an “improvement over the existing capacity accreditation and reliability modeling approaches,” and that the potential for “increase[d] ... accuracy of resource capacity accreditation ... has not been questioned.” The record does not show that PJM’s proposal is an improvement over the existing rules. The record does not show that PJM’s proposal is complete and ready to be implemented. The record does show that PJM’s proposed accreditation method has been questioned and that the questions have not been answered. The record does show that PJM has not met the only relevant standard, whether its proposal evaluated on its own is just and reasonable and not unduly discriminatory. It is not.

Contrary to the unsupported assertions of one participant cited by PJM (at 4), the ELCC is a black box and no participant has demonstrated the ability to match PJM’s ever changing ELCC rating results. In fact, PJM (at 22) clearly explains that the model is a black box that, in PJM’s view, is known and will be known only to PJM. The underlying forecast has recently been reported to include an error which emphasizes the problem with the complete dependence of asset owners, and all market participants, on PJM’s calculation of asset values.<sup>3</sup> Contrary to PJM, the LS Power Motion is relevant to this matter. As LS Power states (at 3): “[T]he PJM Notice demonstrates that market participants cannot rely on the previously-released preliminary ELCC Class Ratings to estimate the Accredited UCAP of their individual resources.”

PJM repeats its assertion that its proposed tariff language should be approved prior to the relevant details being developed or provided. In PJM’s view, the details can be included in Manuals which are not subject to stakeholder approval or Commission approval. In PJM’s view (at 3) it would be inefficient to provide the details now.

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<sup>3</sup> See Attachment, PJM notice issued January 17, 2024 (“PJM Notice”).

PJM wants approval of its broad approach despite the fact that key details are missing, that the proposal has not been fully explained and that there are unaddressed fundamental errors in the approach. In addition, PJM has provided no reliable simulations of how the market design would actually work, in part because PJM is still missing key details of how the market design would actually work.

The Market Monitor has offered the path forward to resume RPM auctions, to correct the unjust and unreasonable penalty rates, and to allow reasonable time for the development and refinement of alternatives to the current capacity market design.<sup>4</sup>

#### **B. PJM's Approach Incorrectly Defines the Obligation to Perform.**

PJM fails to provide a substantive response to the point that PJM's proposed performance obligation is inconsistent with the definition of a capacity resource and inconsistent with the basis for its own ELCC derating method.

PJM's answer (at 6) highlights the inconsistency between the performance requirements in PJM's capacity market proposal and the obligations to perform in the energy market based on capacity market commitment. In the energy market, resources are required to offer 100 percent of their ICAP. Under PJM's proposal, a 100 MW resource with an ELCC of 40 percent that is required to offer 100 MW in the energy market would only be accountable for 40 MW multiplied by the balancing ratio in a PAI despite the fact that its ELCC value was based on the production of 100 MW whenever the resource was capable of doing so.<sup>5</sup> It is also despite the fact that the resource is required to have CIRs equal to the maximum output assumed in the ELCC analysis, 100 MW in this example. All capacity resources are selling the ability to produce at full output whenever possible. Under the EFORd standard, cleared

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<sup>4</sup> Complaint Requesting Fast Track Processing of the Independent Market Monitor for PJM (November 17, 2023) Docket No. EL24-12.

<sup>5</sup> The performance obligation is equal to the UCAP MW multiplied by the balancing ratio (B). The balancing ratio for the winter storm Elliott hours averaged 0.82. The UCAP is the ELCC derated capacity MW, 40 MW in this example.

capacity resources are expected to produce at full output when not on outage. While the current definition of the PAI performance obligation is only equal to full output reduced by the statistical forced outage rate, that is not the correct performance standard and that error should not be repeated and compounded as PJM proposes. The appropriate PAI performance obligation is the full output of the resource after accounting for any actual outages and after accounting for ambient conditions in the case of intermittent resources.

As pointed out in prior filings in this matter, PJM's asserted reliance on referrals to the Commission's Office of Enforcement for failure to offer at full ICAP rings hollow. PJM has never enforced its own tariff on this issue, despite repeated requests from the Market Monitor. Referrals to the Office of Enforcement are not and cannot be substitutes for clear, enforceable rules. PJM's argument only serves to highlight the fact that PJM fails to require performance from capacity resources during PAI based on the actual ability of the resources to perform, as explicitly assumed in the ELCC reliability analysis.

PJM's approach is based on the counterfactual notion of a perfect resource. PJM never explains why this approach is not absurd. Solar resources are an obvious case of why that model is incorrect. A 100 MW solar resource, ELCC derated to 20 MW, is not a perfect 20 MW resource that can replace a 20 MW thermal resource. The derated value is based on an output curve that includes 100 MW at maximum solar radiation and 0 MW at night. The corresponding obligation of that resource to perform is 100 MW at maximum solar radiation and 0 MW at night. The obligation of that resource to perform is clearly not 20 MW at all hours, as PJM would have it.

### **C. PJM's ELCC Approach Fails to Correctly Calculate Resource Specific Performance.**

PJM states (at 12) that "for units with insufficient individual performance history, class performance provides a necessary and reasonable proxy to fill in the missing data of the individual units."

PJM never explains why PJM proposes class based ELCC rather than unit specific based accreditation. PJM has unit specific data that could be used to calculate accreditation

on an appropriate unit specific basis yet persists in a class based approach. PJM argues that this approach was good enough for approval in other, smaller and less diverse RTO/ISOs. PJM asserts, without logical foundation, that class based accreditation provides an incentive to invest in resources in a high value class. Class based accreditation does not provide an incentive to invest in improvements in individual units.

If PJM's assertions about the value of its unit specific performance adjustment were correct, PJM has no supportable reason for not skipping over the clearly deficient class based approach and directly implementing a unit based accreditation.

PJM states (at 12): "Thus, PJM's approach is predicated on demonstrated performance, and, for resources with performance history that does not go back to June 2012, PJM assumes that the resource would have performed like an average resource in the class." PJM is stating that, for any resource that has been added since June 2012, more than 11 years ago, PJM will not make a unit specific performance adjustment. That is not reasonable and fails to provide appropriate incentives for new and better technologies, in the same PJM class, to improve performance. PJM's approach is biased against new and better technologies within a PJM defined technology class. As a result, PJM has not shown that its approach is just and reasonable and not unduly discriminatory.

#### **D. The Proposed ELCC Classes Are Unduly Discriminatory.**

PJM's answer regarding the discriminatory nature of ELCC class definitions further highlights PJM's failure to do accreditation on a unit specific basis. PJM states (at 15) "Currently, PJM does not have sufficient data on the specific types of firm fuel arrangements for most of such resources within PJM in the years going back to 2012. As a result, PJM simply does not have the requisite information at this time to model the performance of resources with firm fuel separately from those without." PJM fails to provide accurate unit specific accreditation because PJM has failed to analyze the available data on fuel supply arrangements and because PJM has arbitrarily decided that if a unit has improved its performance by adding firm fuel since 2012, PJM will not evaluate its unit specific performance. This reinforces and highlights the fatal flaws in PJM's class based rather than

unit based accreditation. The approach clearly and unduly discriminates against innovation and new investments to improve reliability.

PJM states (at 15) “However, PJM will be gathering data from generators fuel arrangements, among other data points, that could be used as a basis for considering a separate ELCC class in the future.” PJM recognizes that their proposed approach is inadequate and again asserts that things will get better. There is no reason the data could not have been gathered already. More importantly PJM fails to explain why PJM does not propose a unit specific accreditation approach rather than shoehorning resources into classes where they clearly do not belong because PJM has not gathered the data.

As a result, PJM has not shown that its approach is just and reasonable and not unduly discriminatory.

**E. PJM Fails to Address the Disconnect Between the Reliability of All Possible Resources and the Resources that Clear the Auction.**

PJM reasserted, without any supporting evidence, that the proposed marginal ELCC based accreditation, despite the counterarguments made by the Market Monitor and others, is just and reasonable. The inevitable differences between the assumed resource mix and the cleared resource mix means the marginal ELCC based accreditations will be inaccurate for the actual resources that PJM market participants will rely on for reliability. A capacity market that uses inaccurate offer quantities cannot be just and reasonable.

PJM repeated its prior assertion that incremental auctions somehow address this issue. That is not correct. PJM’s accreditation values used in the incremental auctions are based on the assumed total resource mix prior to the incremental auction, which may or may not be different from the assumed resource mix used to calculate accreditation values in the Base Residual Auction. PJM is not proposing to use the cleared resources for calculating ELCC based accreditation values for either the base residual auctions or the incremental auctions. The incremental auctions are not relevant to and do not address the fact that PJM is not analyzing the reliability or availability characteristics of the cleared resources, that is the

actual resources that will be relied on for reliability. The result has not been shown to be just and reasonable.

Although PJM does not actually address the issue, PJM continued its general approach of vaguely asserting that the issue could be addressed in the unspecified future (at 18). PJM warned that there are additional implementation details to consider. PJM's vague, untested, unchecked and unverified assertions cannot be relied on as a response to this basic issue affecting the reliability of the system based on BRA results. As a result, PJM has not shown the ELCC approach to be just and reasonable.

The errors introduced by the ex ante ELCC approach lead to a significant problem. It will not be clear that PJM's capacity procurement meets the required reliability standard. PJM will have hypothetically met the reliability requirement under one set of marginal ELCC class ratings based on the inclusion of all resources, but after clearing the auction the correctly calculated ELCC class ratings will have changed. PJM has several responses but each is mistaken.

PJM (at 16) repeated its assertion that the impact of differences between an assumed resource mix and a cleared resource mix would be negligible based on reference to a prior simple example. The Market Monitor has demonstrated that PJM's assertion is not correct.<sup>6</sup> The actual differences in the assumed and cleared resource mix show that PJM misunderstands the significance of the issue and the degree to which PJM's ELCC approach produces incorrect and misleading results. The actual differences between the assumed resource mix and the cleared resource mix are an order of magnitude higher than the very limited example in the PJM analysis.<sup>7</sup>

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<sup>6</sup> See *Answer of the Independent Market Monitor for PJM*, Docket No. ER24-99 (January 12, 2024), at 8-12.

<sup>7</sup> See *Answer of the Independent Market Monitor for PJM*, Docket No. ER24-99 (January 12, 2024), at 9. Table 1: Resource mix of the installed capacity and committed capacity.

In mathematical terms, PJM's ELCC approach can be described as a multidimensional ELCC surface where the ELCC function maps the combination of resource class ICAP MW to a point on the ELCC surface.<sup>8</sup> Under the PJM approach, a point on the surface is chosen several months prior to a capacity auction and the ELCC marginal rates (i.e. partial derivatives) are calculated that correspond to the chosen point. The still outstanding question is what happens to the marginal ELCC rates when the auction results in a different resource mix, or a deviation away from the previously chosen point on the surface. PJM argues, based on a calculation at a single different point, that the errors are not significant. In other words, PJM argues that the partial derivatives are constant or very close to constant. PJM essentially asserts the ELCC surface is a plane or approximately a plane. PJM has not supported this assertion.

**F. PJM's Proposal re Capacity Market Sellers's Attestations Regarding Dual Fuel Capability Is not Adequate.**

PJM asserts that it has the ability to check on the nature of dual fuel capability after the fact during the delivery year. But PJM misses the point that by checking and verifying only after the fact, the impacts on other resources' accreditation and the reliability of the system are ignored. PJM's vague approach also ignores all the possible subtleties about the exact nature and adequacy of dual fuel capability, including for example whether the second fuel is provided by trucks, barges or pipelines and the impact on the reliability of each deliverability method of prolonged extreme weather. PJM states that it does not need "to act as a gatekeeper and determine whether a resource meets the dual fuel operational characteristics before granting ELCC Class eligibility." PJM would create a separate ELCC class but not take responsibility for ensuring that inclusion in that class is supported. PJM is not correct and as a result has not demonstrated that its proposed approach is just and reasonable and not unduly discriminatory.

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<sup>8</sup> See *Protest of the Independent Market Monitor for PJM* at 12, Docket No. ER24-99 (November 9, 2023).



**G. PJM's Proposed Modification of the Market Monitor's Role in Evaluating UCAP is Unsupported.**

PJM proposes to unilaterally eliminate the Market Monitor's role in the review of UCAP values for each capacity resource. UCAP values are currently based on EFORd but would be based on ELCC derating factors under PJM's proposal. PJM attempts to focus on the narrow issue that EFORd would not be the determinant of UCAP rather than on the real issue which is the Market Monitor's role in verifying capacity resource UCAP values under the PJM proposal.

The proposed conceptual change in defining UCAP does not change the fundamental need for Market Monitor review of an adjustment to the quantity that sellers must offer. The current rules in PJM OATT Attachment M-Appendix Section II.C regarding the RPM must offer requirement and determinations about the level of any adjustment to the quantity that must be offered, whether based on EFORd or Accredited UCAP Factor, should be retained.

PJM states that "PJM runs the ELCC model, determines ELCC Class Ratings, and the ELCC Resource Performance Adjustment, and finally, each resource's Accredited UCAP value."<sup>9</sup> While that is a very clear statement of PJM's intent to be the sole determiner of all ELCC values without review using a model that is not subject to review, that approach is inconsistent with the tariff defined role of the Market Monitor.

The substantive role of the Market Monitor in reviewing UCAP requires that PJM provide access to the ELCC model and that the Market Monitor use that model to verify the UCAP values for capacity resources. The Market Monitor would verify the data inputs and calculations supporting unit specific UCAP values. The Market Monitor is responsible for ensuring that offers comply with the RPM must offer requirement, a key requirement for preventing the exercise of market power. The PJM proposal to eliminate the Market Monitor's

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<sup>9</sup> PJM Answer at 22.

review of a key determinant of the level of offers would degrade or eliminate the ability of the Market Monitor to effectively evaluate compliance with the RPM must offer requirement.

The Market Monitor's role in reviewing capacity resource UCAP values provides assurances for all market participants that the calculations are correct and would also provide the opportunity to address specific and detailed questions from resource owners about UCAP values. It is not consistent with the current tariff defined role of the Market Monitor and it is not consistent with the interests of market participants or regulators that PJM create and maintain monopoly control over the definition of a key input to PJM market outcomes.

Even if it were correct that the capacity value of each resource would be determined entirely independent of the Capacity Market Seller, that does not somehow eliminate the need for the Market Monitor's review.

The tariff provisions should define the Market Monitor's access to the ELCC model and to all the inputs to the model and reaffirm the Market Monitor's role in reviewing UCAP values as well as providing all market participants as much information as possible about the determination of UCAP values.

PJM has not supported its proposed elimination of a key function of the Market Monitor. PJM has not supported its proposal to have monopoly control over a key input to PJM market outcomes. PJM's proposal should be rejected as not just and reasonable.

#### **H. The Cost Impact of PJM's Proposals Are Likely to Be Large.**

PJM's simulation analyses do not provide any useful information about the likely additional costs of capacity because they are based on extreme assumptions that are not consistent with PJM's own proposals. PJM does not dispute this fact.<sup>10</sup> PJM's proposals are likely to result in large increases in capacity costs, especially in constrained LDAs. For example, PJM's use of a proxy CPQR adder of \$15 per MW-day is an extremely low estimate

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<sup>10</sup> See Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C., Docket No. ER24-99 (December 21, 2023) at 31.

based on PJM's actual proposal. Despite PJM's protestations elsewhere that PJM is not a policy maker and simply wants to ensure that the market prices include the fundamentals, PJM suggests that higher prices will have numerous salutary effects, including encouraging responsible consumption by customers.<sup>11</sup> PJM appears to agree that prices will be higher and asserts that higher prices are good for all. PJM ultimately fails to demonstrate that the higher prices from PJM's proposal are a result of economic fundamentals rather than PJM's distorted capacity market design proposals. The goal of competitive markets is to ensure that costs are as low as possible, but no lower. PJM does not appear to share that goal.

## II. MOTION FOR LEAVE TO ANSWER

The Commission's Rules of Practice and Procedure, 18 CFR § 385.213(a)(2), do not permit answers to answers or protests unless otherwise ordered by the decisional authority. The Commission has made exceptions, however, where an answer clarifies the issues or assists in creating a complete record.<sup>12</sup> In this answer, the Market Monitor provides the Commission with information useful to the Commission's decision making process and which provides a more complete record. Accordingly, the Market Monitor respectfully requests that this answer be permitted.

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<sup>11</sup> See PJM Answer, Attachment A (Reply Affidavit of Patrick Bruno and Walter Graf) at 100.

<sup>12</sup> See, e.g., *PJM Interconnection, L.L.C.*, 119 FERC ¶61,318 at P 36 (2007) (accepted answer to answer that "provided information that assisted ... decision-making process"); *California Independent System Operator Corporation*, 110 FERC ¶ 61,007 (2005) (answer to answer permitted to assist Commission in decision-making process); *New Power Company v. PJM Interconnection, L.L.C.*, 98 FERC ¶ 61,208 (2002) (answer accepted to provide new factual and legal material to assist the Commission in decision-making process); *N.Y. Independent System Operator, Inc.*, 121 FERC ¶61,112 at P 4 (2007) (answer to protest accepted because it provided information that assisted the Commission in its decision-making process).

### III. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to this pleading as the Commission resolves the issues raised in this proceeding.

Respectfully submitted,



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Dated: January 24, 2024

## CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Eagleville, Pennsylvania,  
this 24<sup>th</sup> day of January, 2024.



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# **Attachment**



## Stakeholder

Good afternoon,

Late last week it was brought to our attention by our Electric Vehicle (EV) forecast vendor S&P Global that they had discovered an error in their calculations for 2025 onwards. The impact to the overall PJM load forecast is not anticipated to be large, though it does have implications for the ability to be able to post associated values such as the 2025/26 Effective Load Carrying Capability (ELCC) Class Ratings and 2025/26 IRM/FPR under the reforms recently filed with FERC as part of the Critical Issue Fast Path - Resource Adequacy. We are working with our vendor to get an update as soon as possible, at which point we will update and re-post the Load Forecast and associated analysis.

Thank you for your patience.

This has been sent to: LAS, PC, MRC, MIC, OC



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