UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	Docket No. ER21-2043-000

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,[1] Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor ("Market Monitor") for PJM Interconnection, L.L.C. ("PJM"),[2] submits this answer to the answer filed by PJM on July 9, 2021 ("PJM July 9th Answer"). In the PJM July 9th Answer, PJM responds to the answer filed by the Market Monitor on June 22, 2021 ("IMM June 22nd Answer"). The record in this proceeding is clear that approving PJM's ELCC proposal in its current flawed states would mean approving a mechanism that cannot be relied upon to produce just and reasonable rates and cannot be assumed to produce just and reasonable rates under the expectation that it will be fixed. If the fixes are known, they should be reviewed and implemented. If the fixes are not known, the proposal should be rejected and returned to PJM for additional development. The current rules have not been found unjust and unreasonable, and there is no urgency to replace them, particularly with an unjust and

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1 18 CFR §§ 385.212 & 385.213 (2020).

2 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").

unreasonable alternative. The current ELCC proposal should be rejected, and PJM should file a new proposal that corrects its deficiencies.

I. ANSWER

A. Transparency

PJM's use of proprietary data to define the capacity value of intermittent resources is not acceptable. Due to the ex ante implementation of the ELCC analysis, it is necessary for PJM to forecast the levels of installed capacity that will clear in the upcoming capacity auction for ELCC resources by ELCC class type and for non ELCC resources. This installed capacity forecast is the key component of the ELCC analysis, and it should be publicly available. Previously the Commission stated that "PJM generally can predict the resource quantities by class prior to making a final ELCC Class Rating determination such that its *ex ante* ELCC analysis is sufficiently accurate."[3] The Market Monitor and market participants need to have the ability to monitor the process and accuracy of the PJM predictions and to raise questions about them. PJM's position that the ELCC analysis can be replicated based on the hourly output and shape data has not been demonstrated and does not provide the needed transparency. Transparency requires that the Market Monitor and the stakeholders have the ability to understand in detail and to replicate the entire process to provide confidence to the market that the ELCC values reasonably represent the capacity value of resources and therefore that the capacity market results are efficient and competitive and will provide the required reliability.

B. Marginal Versus Average

PJM states (at 7) that the "IMM's complaint that use of the class-average approach overstates the reliability contribution of ELCC Resources is not accurate." PJM makes this statement on the basis (at 8) that "the class-average approach recognizes the reliability

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[3] *PJM Interconnection, L.L.C.*, 175 FERC ¶ 61,084 at P 55 (April 30, 2021).

contributions of these resources *in the aggregate*" and that "the sum of resource class's accredited capacity values is equal to the aggregate reliability value of the ELCC." This description of the average ELCC approach is accurate only under the circumstances that PJM accurately forecasts the clearing of the upcoming capacity market auction. The Market Monitor does not agree that this is a likely outcome.[4] But even under the unreasonable expectation that the aggregate level will be correct, the prices and the cleared quantities will not be correct. PJM ignores the implications of incorrectly assigning capacity values using an average ELCC approach. PJM does not address the Market Monitor's point that the ELCC capacity will be underpriced on a $ per MW UCAP basis and will therefore lead to inefficient clearing. Incorrect entry and exit signals will be communicated with the results of the first auction under the PJM ELCC approach. The marginal ELCC could very well be zero or close to zero, indicating that new entry by ELCC resources will not increase the aggregate capacity contribution. But use of average rather than marginal values means that this information will not be communicated to investors and developers, and more ELCC resources will enter in the next auction. This will cause the static aggregate capacity contribution to be spread across a larger ELCC resource fleet and therefore reduce the average price paid to the intermittent resources. This inefficient policy will have consequences, even if unanticipated by PJM. The Market Monitor (at 7) expects the average ELCC approach to lead to "the overstatement of reliability, increased costs to consumers and incorrect price signals." But PJM does not address these issues in detail or explain why the Market Monitor's conclusions are incorrect, especially the conclusions regarding increased costs to consumers and incorrect price signals.

The implications of using the average ELCC approach have not been fully evaluated and the Market Monitor notes that PJM did not respond to the Market Monitor's comments (at 4-6) regarding the limited analysis of the marginal ELCC approach during the

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4 *See* IMM June 22nd Answer at 9-10 for additional discussion.

stakeholder process. Most importantly, PJM has never disclosed marginal ELCC rates based on the same PJM data used to calculate average ELCC values. If the marginal ELCC rates are zero, the aggregate capacity contribution will be static. PJM should be required to calculate and publicly post the marginal ELCC rates that correspond to the class average ELCC numbers as part of increasing the transparency of the ELCC calculations to market participants.

C. Storage Resources and Dispatch Assumptions

PJM states that "[t]he IMM asserts that owners of storage resources will engage in profit maximizing behavior, and that the PJM ELCC model rests on such behavior." PJM seems to misunderstand the Market Monitor's point. The Market Monitor expects storage resources, like all other resources, to pursue profit maximizing opportunities in the energy and ancillary services markets. The Market Monitor does not assume exactly what the profit maximizing behavior for storage resources would be because the behavior of batteries, like all other resources, will depend on market conditions and many separate decisions by many owners.

In contrast, PJM does make strong assumptions about exactly how batteries will behave and those assumptions directly and significantly affect PJM's ELCC results. PJM assumes that batteries are not continuously profit maximizing based on current and expected market conditions. The Market Monitor points out that PJM makes very strict dispatch assumptions for storage resources which are not consistent with profit maximization. Under the PJM ELCC dispatch assumptions, the energy storage resources are always available at full capacity when needed to avoid loss of load.[5] PJM is effectively assuming that a utility central planner is dispatching the batteries rather than a market.

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[5] The PJM ELCC model does include charging constraints. If a storage resource is needed for multiple events within the charging duration, the storage resource would not be available at full capacity for the events other than the first.

There is no allowance in the PJM assumptions for the possibility that energy storage resources will provide regulation service, the only current market activity of batteries, or provide congestion relief during hours of the day not normally associated with peak load conditions, or engage in arbitrage activity that will leave batteries at less than full charge when needed during emergencies. PJM's dispatch assumptions are unreasonable. The simulated dispatch assumptions used by PJM lead to the highest possible ELCC for energy storage resources. PJM misunderstands this point and writes (at 8-9) that the "heuristic to simulate storage resource dispatch in the ELCC model is not correctly characterized as maximizing ELCC value" and that the "ELCC model does not optimize anything with respect to simulated dispatch." The Market Monitor is not claiming that the values are maximized through some complicated optimization scheme inside the PJM ELCC software. It is simply the assumption that the energy storage resources always remain fully charged and available during emergencies to prevent a loss of load. Any other assumption about the behavior of energy storage resources will result in lower ELCC values.

D. Transmission Constraints

PJM repeats (at 10) its unsupported assertions that PJM's ELCC analysis implicitly accounts for "historic transmission limitations for ELCC resources by considering actual operating transmission constraints that impacted historical performance."[6] This vague and effectively meaningless assertion misses the point. Transmission limits must be explicitly accounted for. In its October 30th Filing, PJM recognized that "[t]ransmission limitations are not explicitly modeled in the ELCC simulations" and that the model assumes there are no "transmission-related reliability issues within the PJM footprint."[7] PJM's accurate characterization of the model in that filing highlighted a significant issue that PJM now

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[6] *See* Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C., Docket No. ER21-278-001 (April 13, 2021) at 4–6 ("PJM April 13th Answer").

[7] October 30th Filing, Attachment C (Rocha Garrido Affidavit) at ¶ 28.

proposes to ignore. PJM does not have actual output data for each historical calendar year for each variable resource that is included in its ELCC calculations. In fact PJM combines what it terms "historical putative" generation data with actual historical generation data in the ELCC analysis.[8] It is logically impossible that PJM's putative data implicitly accounts for transmission limits or any other feature of the network. The putative generation did not actually exist and did not have specific locational characteristics and therefore could not have been affected by transmission limits. The Market Monitor responded to this incorrect and unsupported claim in a previous filing.[9]

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.[10] 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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8 *Id*. at ¶ 15b.

9 *See* Answer and Motion for Leave to Answer of the Independent Market Monitor for PJM, Docket No. ER21-278-000 (April 28, 2021) at 3–6.

10 *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 answer as the Commission resolves the issues raised in this proceeding.

Respectfully submitted,

Jeffrey W. Mayes

General Counsel
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
(610) 271-8053
jeffrey.mayes@monitoringanalytics.com

Joseph E. Bowring
Independent Market Monitor for PJM
President
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
(610) 271-8051
joseph.bowring@monitoringanalytics.com

John Hyatt
Senior Economist
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
(610) 271-8050
john.hyatt@monitoringanalytics.com

Dated: July 20, 2021

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 20th day of July, 2021.

Jeffrey W. Mayes
General Counsel
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
(610) 271-8053
jeffrey.mayes@monitoringanalytics.com