

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

PJM Interconnection, L.L.C.)
) Docket No. ER16-873-000
)

**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 for PJM² (“Market Monitor”), submits this answer to the answer of PJM Interconnection, L.L.C. submitted on March 9, 2016 (“PJM”). Most of the arguments made by PJM and others in their answers do not require a response. However, certain statements made by PJM concerning the nature of the relative root mean square hourly error (“RRMSE”) test as applied to Demand Resources managed by curtailment service providers (“CSPs”) require a response in order to ensure a complete and accurate record.³

I. ANSWER

The introduction of the Capacity Performance changes to the PJM Capacity Market made clear that the actual performance of capacity resources is essential, that there are no excuses for nonperformance and that all capacity resources are treated as substitutes

¹ 18 CFR §§ 385.212 & 385.213 (2015).

² Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff (“OATT”) or the PJM Operating Agreement (“OA”).

³ Throughout this pleading Demand Resources refers to emergency and pre-emergency load response.

without any preferential treatment. An essential part of the Capacity Performance rules is that Demand Resources must be annual products, like other capacity resources. Demand Resources were summer only products under prior capacity market rules, and while extended summer and annual products were created for the 2014/2015 auctions, most Demand Resources have been summer only products.⁴ The newly required calculation of load reductions by Demand Resources in the winter will use a Customer Baseline Load (CBL) to measure load reductions for performance verification.⁵ The Market Monitor agrees with PJM that the Capacity Performance requirements that Demand Resources be an annual product and that CBL be used in the winter are positive steps toward ensuring that Demand Resources are treated like other capacity resources. However, while the use of CBL is an improvement, it does not imply that CBL should be applied without checking for the accuracy of the selected CBL. There are multiple types of CBL and the default CBL cannot be assumed to be the most accurate for all customers. It is not disputed that the use of the RRMSE test for each customer helps ensure selection of an accurate CBL and therefore an accurate measure of actual performance. An accurate CBL, determined by application of the RRMSE test, should be a prerequisite for a customer to register as a Demand Resource.

PJM's proposed approach is not just and reasonable and should be rejected because it is inconsistent with the core requirement of the Capacity Performance capacity market design to provide strong incentives for performance, which cannot be effective if performance is not accurately measured.

⁴ Additional product types were added for the 2014/2015 delivery year. The limited product had a mandatory dispatch for June through September, the extended summer product had a mandatory dispatch of June through October and the following May and the annual product had a mandatory dispatch for the entire delivery year. Demand Resources cleared in subsequent capacity auctions have included very little of the annual product.

⁵ See PJM Filing, ER15-623-000 (February 23, 2016); *PJM Interconnection, L.L.C., et al.*, 151 FERC ¶ 61,208 at P 54 (2015); RAA Schedule 6 § K.

A. The RRMSE Is Necessary for Accurate Measurement and Verification.

PJM agrees (at 4) that applying the RRMSE results in more accurate measurement and verification for Demand Resources: “[I]t is true that requiring RRMSEs for Curtailment Service Providers of all Load Management Resources would likely result in more accurate measurements of load reductions from Demand Resources.”⁶

However, PJM also states that despite the increased accuracy, “PJM does not believe that [RRMSE] measurements would be significantly more accurate on an aggregate basis...” PJM does not define what it means by significantly or how it reached this conclusion. It is also unclear what PJM means by aggregate. Regardless of whether aggregate means CSP portfolio or all Demand Resources in the market, the accuracy of the measurement of load reductions will improve if the RRMSE is used.

Despite PJM’s unsupported claim about the accuracy of measurements on an aggregate basis, compliance is based and must be based on measurements at an individual customer level. “Compliance is determined on an individual customer basis by comparing actual metered load to an end-use customer’s Customer Baseline Load or alternative CBL determined in accordance with the provisions of Section 3.3A.2 or 3.3A.2.01 of the Operating Agreement.”⁷ Reductions are measured at the individual customer level, and CSP portfolio compliance is measured as the aggregate performance of individual customers. Increased accuracy for individual customers will result in increased accuracy for the aggregate. Selecting the correct CBL for each customer will improve the accuracy of the calculated load reductions.

It is surprising that PJM opposes the application of the method that is known and accepted in PJM rules for selecting the most accurate CBL given PJM’s position on and the

⁶ See “Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C.,” Docket No. ER16-873-000 (March 9, 2016) at 4.

⁷ OATT Attachment DD § K.

Commission order on Capacity Performance capacity market design that requires performance, without excuses, as the core concept of Capacity Performance. PJM's position is inconsistent with the fundamental purpose of the Capacity Performance construct. The Capacity Market cannot function as efficiently and effectively as possible if some resources are exempt from the requirement to verify performance.

The RRMSE will permit the selection of the most accurate CBL to measure the performance of individual resources, which is the core of the Capacity Performance approach. The RRMSE should be required for all Demand Resources to select an accurate CBL.

B. PJM's Initial Filing Was Correct.

The Capacity Performance filing made substantial changes to the PJM market design. Capacity Performance requires all capacity resources including Demand Resources to perform in the winter, and their performance needs to be accurately measured and verified. The Capacity Performance rules require the use of CBL for measuring the performance of Demand Resources in the winter. The CBL approach requires the use of the RRMSE to determine the most accurate CBL for each resource.

PJM asserts that the Market Monitor proposes "a more rigid measurement and verification standard that would not only result in additional administrative burdens for affected Curtailment Service Providers and electric distribution companies without producing commensurate benefits, but was never the goal nor the intent of PJM and its stakeholders."⁸ PJM asserts, for the first time in the many months of discussing this issue in the stakeholder process, that it was a "drafting oversight" on their part to not make it explicit that the RRMSE would not be required for winter compliance. PJM has no basis for its assertions about the goal and intent of PJM stakeholders.

⁸ See "Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C.," Docket No. ER16-873-000 (March 9, 2016) at 5, citing PJM Filing, Docket No. ER16-873-000 (February 3, 2016) at 3.

While PJM agrees that the RRMSE would likely result in more accurate measurement of load reductions, and that the rules require use of RRMSE for Economic Resources, PJM characterizes use of RRMSE as more rigid.⁹ PJM recognizes that more accurate measurement and verification has associated costs. PJM makes the unsupported assertion that there are not commensurate benefits. PJM ignores the fact that other resources are required to accurately measure their performance.

While supporting the use of RRMSE for Economic Resources, PJM ignores the fact that only 1.0 percent of all demand response revenue is paid to Economic Resources while 98.4 percent of all demand response revenue is paid to Demand Resources.¹⁰ In 2015, \$812 million was paid to Demand Resources. Logic suggests that it is important to ensure that measurement and verification is done accurately for Demand Resources. Logic suggests that the total benefits of applying RRMSE to Demand Resources would exceed the total benefits of applying RRMSE to Economic Resources.

The cost of accurately measuring performance is reasonable and necessary. The Capacity Performance rules require that capacity resources bear the cost of meeting their performance obligations. For Demand Resources this means, at a minimum, incurring the cost to verify that they are using the best CBL for winter performance. This is an appropriate and necessary precondition for participation in PJM markets.

C. The RRMSE Ensures the Most Accurate CBL for Measurement and Verification.

PJM asserts that RRMSE is appropriate for Economic Resources but not for Demand Resources. The RRMSE is used to select a CBL which most accurately reflects the expected

⁹ Throughout this pleading Economic Resources refer to economic load response.

¹⁰ The other 0.6 percent is paid to synchronized reserve resources. *2015 State of the Market Report for PJM*, Volume 2, Section 6: Demand Response, Figure 6-1.

load in the absence of reductions to meet a performance requirement. That is the reason to use RRMSE for Demand Resources.

PJM focuses on the role of RRMSE in the prevention of gaming by Economic Resources, which is an issue, to the exclusion of the interest in accurate measurement. PJM states, “participants could, if permitted to use the default CBL estimate without submitting an RRMSE, selectively decide when they want to operate in order to improve their compliance measurements.”¹¹ PJM’s assertion is that their approach is just and reasonable because Demand Resources cannot game the CBL in exactly the same way as an Economic Resource.¹² While gaming is not the only consideration, PJM ignores the fact that Demand Resources can be and are compensated for voluntary compliance, raising exactly the same gaming issues.

In addition to misunderstanding the Market Monitor’s point, the AMEA raises an interesting point related to the timing of the RRMSE.¹³ The current RRMSE rules would require calculation based on the 60 most recent days of contiguous hourly data before the registration date which is typically just prior to the start of a delivery year. The AMEA’s point implies that it would be more appropriate to calculate the RRMSE just prior to the winter in order to more accurately select a CBL for winter months. The Market Monitor agrees.

D. Administrative Difficulty Is Not A Reason to Avoid the Use of the RRMSE Test.

While it would be preferable for the CSPs to calculate RRMSEs subject to verification, the Market Monitor has volunteered to make the calculations to ensure that the

¹¹ *Id* 6.

¹² *Id* 6.

¹³ See “Answer and Motion for Leave Answer of the Advanced Energy Management Alliance,” Docket No. ER16-873-000 (March 9, 2016) at 4.

alleged administrative difficulty is not considered a legitimate reason to reject more accurate measurement and verification. PJM could also do the calculations. The process for calculating the RRMSEs is not complicated. In order for the Market Monitor to calculate the RRMSEs, CSPs would have to provide a list of all customers registered as Demand Resources and the 60 most recent days of contiguous hourly load data before the registration date which is typically just prior to the start of the delivery year. The CBL certification is performed once before the Demand Resource is registered. The RRMSE calculation would be performed exactly as defined in PJM Manual 11:¹⁴

- To perform the RRMSE calculation, daily CBL calculations are first performed for the CBL method using hours ending 14 through hours ending 19 unless otherwise approved by PJM as the simulated event hours for each of the 60 non-event days according to the CBL method rules.
- Actual Hourly errors are calculated by subtracting the CBL hourly load from the actual hourly load for each of the simulated event hours of the non-event day.
- The Mean Squared Error (MSE) is calculated by summing the squared actual hourly errors and dividing by the number of simulated event hours.
- The Average Actual Hourly Load is the average of the actual hourly load for each of the simulated event hours.
- The Relative Root Mean Squared Error (RRMSE) is calculated by taking the square root of the MSE then divide that quantity by the average of the actual load.

¹⁴ PJM. "Manual 11: Energy & Ancillary Services in Market Operations," Revision 79 (December 17, 2015) p. 123.

PJM makes vague and unfounded assertions about the Market Monitor's ability to maintain the confidentiality of the required data.¹⁵ PJM does not point to any law or regulation that would prevent the Market Monitor or PJM from calculating the RRMSE for Demand Resources. The Market Monitor routinely handles confidential data as does PJM.

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.¹⁶ 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.

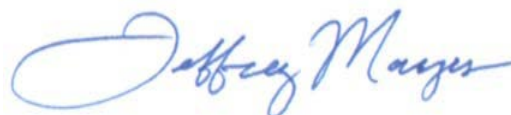
III. CONCLUSION

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

¹⁵ See "Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C.," Docket No. ER16-873-000 (March 9, 2016) at 7.

¹⁶ 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).

Respectfully submitted,



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Dated: March 22, 2016

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 22nd day of March, 2016.



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