

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

PJM Interconnection, L.L.C.)	
)	Docket No. EL21-83-001
v.)	
)	
PJM Interconnection, L.L.C.)	
)	

**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”), submits this answer to the answer submitted by PJM on November 22, 2022 (“November 22 Filing”). PJM filed the complaint initiating this proceeding on June 10, 2021 (“June 10th Complaint”). The June 10th Complaint identified (at 1–2) a flaw in the market design. In its supplemental filing on October 19, 2022 (“October 19th Filing”), PJM proposed a temporary narrow fix while stakeholders continue to discuss a permanent and better solution. The Market Monitor agrees that the June 10th Complaint identifies a significant flaw in the PJM market rules and that the flaw should be corrected, but PJM proposes only a narrow fix that does not address the significant flaw. The Market Monitor does not agree that PJM’s temporary narrow fix in the October 19th Filing addresses the significant flaw in the market rules and the Market Monitor does not agree that PJM’s temporary narrow fix addresses even the narrow issue that PJM attempts to fix.

¹ 18 CFR §§ 385.212 & 385.213 (2022).

I. COMMENTS

A. PJM's Solution Does Not Correct the Identified Market Flaw.

PJM states (at 1) that its proposal will ensure that RegD resources providing regulation will be properly compensated in the event that the RegA signal does not change for an entire hour. PJM asserts (at 5) that its proposal is targeted because it would affect only two hours.

PJM's proposal does not address even the narrow version of the issue that PJM identified. PJM's proposed floor on RegA mileage will not have any effect on RegD settlement in the hours when the RegA signal is fixed at zero for the clock hour.

PJM's proposal will not correct the broader problem of RegD resources being incorrectly compensated. In the June 10th Complaint, PJM recognized (at 4) that an efficient market requires that resources be paid credits in accordance with the applicable clearing price. PJM's market design sets a price based on dollars per effective regulation MW but does not pay RegD resources this price. PJM's proposal in the October 19th Filing does not correct this issue.

In the October 19th Filing, PJM notes (at 5) that since the mileage ratio was introduced into the PJM market design on October 1, 2012, there have only been two (2) hours in which RegA hourly mileage was equal to zero. During those two hours the performance price was zero. This means that PJM's proposal would have had no effect on the settlement of performance credits for RegD in the two hours PJM identifies as hours in which it would have been implemented. This result is a predictable side effect of the currently flawed market design.

Because the marginal benefit factor (MBF) is not used in settlements, but the mileage ratio is, RegD resources have an incentive to self schedule and/or offer at \$0 for both capability and performance prices. When offering at zero, RegD MW providers are ensured that they will clear RegD MW until the marginal benefit (the MBF) of using more RegD in a clock hour is at the floor MBF value (close to zero). This is because the market clearing

engine sees RegD resources with a zero offer per effective MW as being free, even though the absence of the MBF in settlements means that RegD resources will be paid \$/effective MW price set by the marginal RegA offer. This means that RegD resources, with offers set to zero, are not setting price. RegA resources are setting prices.

In the hours where the RegA mileage is equal to zero, the performance price for RegA resources is zero, regardless of the RegA \$/mile offer (Zero RegA mileage \times \$/mile RegA offers = \$0). RegA sets the performance price. As a result, when the performance price is \$0, the narrow issue of the denominator identified by PJM does not exist. This means that in the hours where the targeted PJM proposal would put a floor on RegA, there would be no effect on RegD settlement of performance credits. RegA mileage equals zero in hours when RegA is at its maximum level for the entire hour, doing a lot of work but with zero measured mileage because the resources are at maximum for the entire hour.

PJM's proposal does not address the fundamental issue that the current PJM regulation market design fails to pay RegD resources the applicable clearing price in any hour, whether the mileage ratio is undefined or not. Because of this error, the PJM current regulation market does not correctly compensate RegD resources in any hour and PJM's proposal does not change that fact. The MBF, properly defined, provides the relative amount of effective regulation that is provided by RegA and RegD, based on the amount of RegA and RegD that clear the market. The mileage ratio is merely an artifact of the interdependent RegA/RegD signal design, not a measure of relative work or value provided.

Using the mileage ratio as a proxy for relative value in settlement instead of the MBF is a market distortion and results in RegD resources not being paid the market clearing price. As a result of this market failure, RegD was collectively overpaid \$8.9 million in 2021 and collectively underpaid \$6.4 million in the first three quarters of 2022.

In first of the clock two hours referenced by PJM, the clearing price for capability (RMCCP) was \$32.51, the clearing price for performance (RMPCP) was \$0, the RegD MBF in that clock hour was 1.39 and the mileage ratio was undefined (RegA miles were zero).

When the price for performance is \$0, the narrow issue of the denominator identified by PJM does not exist. The price per effective MW in the clock hour was \$32.51. RegA and RegD resources were paid \$32.51 per performance adjusted MW in the clock hour. However, since the MBF for the clock hour was 1.39, every 1 MW of RegD was providing 1.39 effective MW of regulation in that clock hour. Based on this MBF, RegD resources should have been paid \$45.19 per performance adjusted MW ($1.39 \times 32.51 = 45.19$) instead of \$32.51 per performance adjusted MW. This means that because the regulation market does not include the MBF in settlement, but does include the mileage ratio, the RegD resources were underpaid by \$12.68 per performance adjusted MW in the clock hour. The PJM narrow proposal to put a floor on the RegA mileage at 0.1 miles would have had no effect on regulation credits awarded to RegD resources in this clock hour. PJM's proposal does not address the broader issue at all.

In the second of the two clock hours with zero RegA miles referenced by PJM, the price for capability (RMCCP) was \$0, the clearing price for performance (RMPCP) was \$0, the RegD MBF in that clock hour was 1.23 and the mileage ratio was undefined (RegA miles were zero). When the price for performance is \$0, the narrow issue of the denominator identified by PJM does not exist. In this case RegD resources were correctly compensated because the market was not affected by the absence of the MBF in settlement. The PJM narrow proposal to put a floor on the RegA mileage at 0.1 miles would have had no effect on regulation credits awarded to RegD resources in this clock hour. PJM's proposal does not address the broader issue at all.

PJM's proposal would not correct payments in hours where RegA mileage was equal to zero for the clock hour. PJM's proposal to put a floor of 0.1 miles on RegA mileage in the mileage ratio scalar calculation will not result in regulation resources being properly compensated. There is no economic justification for a mileage ratio scalar, regardless of a value, to be used to modify the marginal performance price (RMPCP) paid to RegD resources.

B. The Market Monitor's Proposal Addresses the Market Flaw Identified by PJM.

PJM states (at 4) that the Market Monitor's proposal is much broader than the scope of this 206 proceeding, given that it would change a key element of the regulation market rather than just addressing the narrow issue of an undefined mileage ratio.

Contrary to PJM's assertion, the Market Monitor's proposal to use the MBF in settlements and eliminate the mileage ratio directly addresses the market failure caused by the mileage ratio scalar. Paying RegD resources \$/effective MW prices for effective MW provided would correct the observed market flaws and would eliminate the irrational market results observed by PJM. Further, the Market Monitor's proposal would provide the correct incentives for market offers by RegD resources and would eliminate the need for PJM's proposed change.

As an alternative to directly correcting market outcomes by applying the MBF in settlement calculations, the Market Monitor recommends that the Commission cap the mileage ratio at 1.0. Capping the mileage ratio at 1.0 would limit the market distortion caused by the mileage ratio in the current flawed market design. Capping the mileage ratio at 1.0 would bring the mileage ratio more closely in line with observed average MBF values. Capping the mileage ratio at 1.0 recognizes that RegA resources are providing regulation and doing significant work to offset the shortcomings of RegD resources even when the mileage calculation shows zero.

Based on analysis presented by the Market Monitor in the stakeholder process when PJM first discussed its proposal to put a floor of 0.1 miles on RegA, capping the mileage ratio at 1.0 would (for the period between January 1, 2020, to March 31, 2021) affect 99.99 percent of hours, but would have no effect on the minimum or maximum price paid to RegD. A cap on the mileage ratio of 1.0 would have reduced the average price paid to RegD

from \$16.71 per MW to \$13.66 per MW.² Capping the mileage ratio at 1.0 would still result in overpayments to RegD because the average MBF in the January 1, 2020, to March 31, 2021, period was less than 1.0. RegA resources were paid an average of \$13.65 per effective MW in the same period.

C. PJM's Proposal Circumvents the Stakeholder Process.

PJM states (at 1) that the PJM's proposal is intentionally limited so as to not circumvent the ongoing stakeholder discussions. PJM argues (at 4) that adopting the Market Monitor's proposal would circumvent the stakeholder process. PJM states (at 4) that PJM stakeholders should be given an opportunity to review and openly discuss solutions in the active stakeholder process examining this very issue.

Ironically, PJM's proposed fix explicitly circumvents the PJM stakeholder process. PJM's proposal to put a floor of 0.1 on RegA mileage as a fix to the undefined mileage ratio problem was presented to, and rejected by, the PJM stakeholders at the Market Integration Committee (MIC) meeting of September 9, 2021.³ At the same meeting, the Market Monitor proposed an alternative temporary fix of the issue by capping the mileage ratio at 1.0.⁴ Participants asked PJM to come back with a compromise between the two positions, but instead PJM withdrew its proposal to put a floor of 0.1 on RegA mileage. PJM also agreed to support a stakeholder process to develop a review and overhaul of the entire regulation market.

² Including the two hours where the RegA mileage was zero for the clock hour, there were three hours in PJM's referenced period where RegA mileage was less than 0.1 for the clock hour.

³ See PJM Presentation "Regulation Mileage Ratio Calculation," September 9, 2021 <<https://pjm.com/-/media/committees-groups/committees/mic/2021/20210909/20210909-item-05a-undefined-regulation-mileage-ratio-calculation-pjm-presentation.ashx>>.

⁴ See Market Monitor presentation: "Mileage Ratio Issue," September 9, 2021 <<https://pjm.com/-/media/committees-groups/committees/mic/2021/20210909/20210909-item-05b-undefined-regulation-mileage-ratio-calculation-imm-presentation.ashx>>.

Although this review of the regulation market is underway, PJM unilaterally made its 206 filing without going through the stakeholder process.

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.⁵ 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.

⁵ 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,



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Dated: December 7, 2022

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 7th day of December, 2022.



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