

Market Monitor supports the strong support in the February 1st Filing for preserving the nodal energy market and requiring market power mitigation for distributed energy resource aggregators (“DERAs”). The February 1st Filing does not propose strong enough rules to protect the markets from EDCs’ vertical market power. Like the Market Monitor, commenters raised the problematic dual role of the Electric Distribution Company (EDC) as both a market gatekeeper and a competitor. The February 1st Filing does not propose to protect the competitiveness of the markets in the preregistration process that determines who can participate as a distributed energy resource (DER), or in the dispatch of distributed energy resource aggregations. The markets require clear rules to ensure that market power mitigation and market manipulation rules will extend to DER aggregations. The Market Monitor agrees with commenters that more protections for customers are required. The continued competitiveness of the PJM markets requires defining jurisdictional boundaries between the Commission and the states in the DER aggregation market rules. The Market Monitor disagrees with commenters’ attacks on the fundamental nodal LMP market design of the PJM energy market. The February 1st Filing is correct in requiring only nodal aggregation of DERs. Contrary to the commenters’ arguments, the dynamic nature of the PJM market cannot be squeezed into a static definition of zonal areas with uniform effects on constraints. The dispatch of the market resources and the resulting LMPs cannot be efficient under multinodal aggregation of resources.

I. ANSWER

A. Lack of Clear Rules in the Preregistration Process Will Reinforce the EDC’s Role as a Gatekeeper and Leave Competitive DER Aggregators Unprotected.

AEE and SEIA (at 20–23), AEMA (at 26–32), and Consumer Advocates (at 15–16) argue that the proposed preregistration process will create barriers to entry for competitive DERAs. The Market Monitor agrees. The proposed preregistration process, with no defined time limit, will increase the potential for abuse of the EDC’s gatekeeper role and as a result will fail to remove a barrier to entry for competitive DERAs. The February 1st Filing creates an

undefined process yet refuses to assert any responsibility for the process or the consequences of the process. The proposed process would undermine competition in the wholesale market. It would be possible for EDCs to take an unlimited amount of time in the preregistration process for its competitors while completing the process for its own resources. As the Market Monitor Comments state (at 7), the proposed preregistration process is “for wholesale market participation and thus, wholesale market rules should apply.” PJM, as the creator of the process, should develop rules that govern the preregistration process including: a timeline; clear, objective, verifiable criteria for participation; and explicit, enforceable market share limits for each EDC. The Commission should direct PJM to clearly define rules for PJM’s role in the process.

B. Jurisdictional Issues Need to be Defined and Addressed.

Commenters have different opinions on the jurisdictional boundaries between the Commission and state and local authorities, especially regarding preregistration, registration, dispatch overrides and associated dispute resolution processes. Unless these boundaries are clear, the efficiency of the wholesale power market is more likely to be harmed than helped, contrary to the goal of facilitating DERs. Order No. 2222 asserts that the Commission will not exercise jurisdiction over individual DERs although the Commission will exercise jurisdiction over the sales by DERAs into the PJM markets.⁴ Beyond the interconnection of DERs, however, because DER Aggregation Resources are comprised of state jurisdictional resources, potential jurisdictional overlap still exists when it comes to data exchange, real-time operation and dispute resolution. Many of the PJM Market Rules, and by extension the Commission’s market behavior rules, require information about the capability and operation of resources, which will comprise the information about the component DERs. Reliability and market efficiency questions will remain unsolved and stakeholders will face regulatory uncertainty until these jurisdictional issues are resolved.

⁴ Order No. 2222 at P 43.

The Order No. 2222 implementation date also requires close coordination between the wholesale market and the state authorities, especially because states in PJM are at various stages in terms of the DER penetration level and related state policies. Some states have already developed rules to integrate an increasing number of DERs while others have not yet started the process. To ensure the successful integration of DERs into the wholesale power market, states should have sufficient time to develop rules and regulations for DERs and should be ready to accommodate DERs' participation in the wholesale market.

The roles and responsibilities of the Market Monitor also need to be clearly defined. Market manipulation or exercises of market power may involve, among other things, the preregistration process, EDC overrides, or the operation of component DERs. Market monitoring requires access to data and communication with all involved entities.

The Market Monitor disagrees with the assertions of the Joint Consumer Advocates (at 13) that market monitoring alone provides adequate protection to customers from the market power issues associated with the participation of DERs. Market monitoring in the absence of clear rules cannot be effective. In the case of DERs, the rules are not adequately developed and the jurisdictional roles are not defined in a way that provides clear processes for enforcement. Preventing opportunities for exercises of market power and for market manipulation is not discrimination against DERs, EDCs, or any other entity. It is simply consistent with PJM and Commission policy that relies on competitive markets to produce just and reasonable rates. The February 1st Filing does not overstep in creating rules to protect the markets. It does not go far enough.

Both states and the Commission have jurisdiction over DERs' participation in the wholesale markets. It is essential to be clear and transparent from the beginning about the lines of jurisdictional demarcation and, for PJM, the wholesale market rules that apply. In the absence of such rules, there will be jurisdictional disputes, uncertainty and the potential for gaming of the rules. The market requires clear definitions of when and where the jurisdictional boundaries apply. The Commission should direct PJM to include in its tariff

clear, enforceable rules for all DERA and EDC processes and make clear the responsibilities that will remain with the states in ensuring competitive market behavior.

C. DER Aggregation Resources Can Have Market Power.

AEMA argues (at 13–16) that DER Aggregation Resources should not be required to submit cost-based offers because small DERs will have a “negligible, if any, price impact” and because PJM Manual 15 does not include guidelines for demand response resources. DER aggregation resources can set prices and can have market power. The size of resources does not change those facts. All resources that can set prices and have market power are subject to the market power mitigation rules, regardless of the size. There should be no exceptions. There is no guarantee that DER Aggregation Resources are going to be small, as the February 1st Filing does not propose maximum size requirement for DER Aggregation Resources. Exempting all DER Aggregation Resources from the cost-based offer requirement just because there are no current fuel cost policy or cost-based offer guidelines for demand response resources is not a credible argument. As explained in the Market Monitor Comments (at 15–17), a DER Aggregation Resource is not the same as a demand response resource. The lack of existing rules is not a justification for failing to create rules when they are clearly necessary in order to help maintain a competitive wholesale power market.

D. Aggregation at a Single Pricing Node is Necessary to Preserve Market Efficiency.

As described in the Market Monitor Comments (at 8–10), allowing DER aggregation across nodes is not necessary and would distort market signals.

AEE and SEIA argue (at 8–9) that because 50 percent of the pricing nodes in PJM have 7 MW or less of load it would be challenging for DER Aggregators to compete with other aggregators, to aggregate residential and small commercial DERs (ranging from 0.5 kW to 1 kW), and meet the 100 kW minimum size threshold. AEMA makes a similar argument (at 6–7). The point of these objections is not clear, given that the purpose of the DER rules is to permit small customers to participate. According to the cited PJM presentation, the average

PJM load pnode interconnects load that varies from 5 to 15 MW.⁵ Based on this size, there could be thousands of DERs at the average load pnode. AEE and SEIA's concern that the aggregators will struggle to aggregate 100 to 200 or more customers at a single pricing node is unsupported. There are sufficient potential DERs for competition and aggregation at a single node. The Market Monitor supports making the minimum size as small as possible. The successful integration of DERs in the PJM markets requires the growth of DERs to be consistent with the efficient functioning of the PJM market. There are a significant number of small generation resources participating in the PJM market that are less than 7 MW and operating without aggregating with other resources.⁶ Single node aggregation does not prevent market entry or undermine competition.

1. AEMA, AEE and SEIA Mischaracterize Congestion.

AEE and SEIA (at 7–11), along with AEMA (at 6–13), claim that congestion happens only in a limited area and thus, PJM should allow multi nodal aggregation in rarely congested areas. The commenters are incorrect and misunderstand the basic functioning of the PJM nodal energy market. The PJM market is a nodal market. The PJM market was designed from the beginning in 1999 as a nodal market because nodal markets provide efficient price signals to generation injections in an economically dispatched, security constrained market. It is impossible to know when constraints will bind ahead of time. It is impossible to define what “rarely” means. There is no logical reason for a competitive, efficient locational energy market to artificially aggregate price signals to injections across nodes for any purpose. The nature of congestion has changed dramatically in PJM over the last ten years. Constraints are dynamic and often simultaneous. A single constraint affects many pnodes at the same time.

⁵ “Locational Requirements: Enode, Pnode and electrical location education,” PJM Presentation to the DIRS (April 27, 2021) at 5.

⁶ See 2021 State of the Market Report for PJM, Vol II. (March 10, 2022) at 615–618.

For example, the Three Mile Island (TMI) transformer, the constraint resulting in the most congestion costs in 2021, was binding in 2020 and 2021 in 1,180 and 1,503 hours for the day-ahead market and 626 and 693 hours for the real-time market.⁷ On a constrained day for the day-ahead market, supply at an average hourly 6,904 load pnodes would have provided relief to the constraint, and supply at 2,100 load pnodes would have exacerbated the constraint.⁸

Even if one could identify a group of pricing nodes that do not have an impact on a particular constraint, it is very likely that they have an impact on another constraint. Even if that group of pricing nodes does not have impact on any constraint at one point in time, it is very likely that they have impact on a constraint (or multiple constraints) at another time. A simple comparison of the constraints in the top 25 lists published in the State of the Market Report shows that the constraints vary from year to year and quarter to quarter. The lists are never static. For example, only one constraint makes both the top 25 most frequent constraints for 2021 and for 2016, five years earlier.⁹ Most importantly, constraints change in unexpected ways, especially given the dynamics that DER Aggregation Resources will bring to the grid. Using historical data to identify major transmission constraints as proposed by AEE and SEIA (at 9–10) would inevitably lead to inaccuracy in real-time dispatch and settlement. The result would be an inefficient wholesale market.

AEMA's use of the top 25 most frequently binding constraints from the State of the Market Report for PJM (at 8) is incorrect and thus, its argument based on the table is invalid. AEMA refers to the table to support its argument that PJM should identify the major

⁷ Monitoring Analytics, L.L.C., *2021 State of the Market Report for PJM*, Vol. II, Section 11: Congestion and Marginal Losses at Table 11-31.

⁸ Data calculated for April 20, 2021 using day-ahead market distribution factors. The exact value of distribution factors can vary with system conditions.

⁹ Monitoring Analytics, L.L.C., *2021 State of the Market Report for PJM*, Vol. II, Section 11: Congestion and Marginal Losses at Table 11-31 and Monitoring Analytics, L.L.C., *2016 State of the Market Report for PJM*, Vol. II, Section 11: Congestion and Marginal Losses at Table 11-22.

constraints and allow aggregation across pricing nodes that are far from those major constraints (at 7–10). AEMA claims that there are only 25 frequently congested facilities according to the table and that the remaining 9,975 facilities are not adjacent to congestion. To get the number of infrequently congested facilities (9,975) AEMA subtracts the top 25 constraints (25) from a rough estimate of the total number of pricing nodes in PJM (10,000).

But a constraint is not a pricing node. Constraints are affected by many nodes which may be near or very far from the constrained facility. The cost of a constraint is reflected in multiple pricing nodes' congestion component of LMP (CLMP) by distribution factors (dfax) but a constraint is not equivalent to a pricing node. AEMA's calculation that subtracts the number of congested facilities from the number of pricing nodes is wrong.

The congestion maps in the State of the Market Report show the geographic extent of nodal pricing in PJM and how it differs in the day-ahead and real-time markets.¹⁰ Nodal LMPs vary, even when averaged over the entire year, all across the footprint.

Aggregation behind a single node is feasible, will not threaten the nodal market principle, and will encourage competition. The Commission should accept PJM's proposal to permit only DER aggregation behind a single node for pricing purposes.

I. 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.¹¹ In this answer, the Market Monitor provides the

¹⁰ Monitoring Analytics, L.L.C., 2021 State of the Market Report for PJM, Vol. II, Section 11: Congestion and Marginal Losses at Figures 11-4, 11-5, and 11-6.

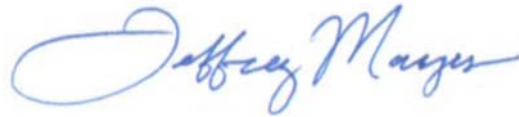
¹¹ See, e.g., *PJM Interconnection, L.L.C.*, 119 FERC ¶61,318 at P 36 (2007) (accepted answer to answer that "provided information that assisted ... decision-making process"); *California Independent System Operator Corporation*, 110 FERC ¶ 61,007 (2005) (answer to answer permitted to assist Commission in decision-making process); *New Power Company v. PJM Interconnection, L.L.C.*, 98 FERC ¶ 61,208 (2002)

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.

II. CONCLUSION

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

Respectfully submitted,



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(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).

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 18th day of April, 2022.



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